## **NYE-DT 60**

1	UNITED STATES DISTRICT COURT
2	SOUTHERN DISTRICT OF TEXAS HOUSTON DIVISION
3	Case No. 4:21-cv-00575
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5	IN RE: APACHE CORPORATION SECURITIES
6	LITIGATION
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11	REMOTE VIDEO DEPOSITION OF LUCY P. ALLEN
12	July 27, 2023
13	***************
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15	REMOTE VIDEO DEPOSITION OF LUCY P. ALLEN taken
16	via Zoom in the above-styled and numbered cause on July 27,
17	2023, commencing at 9:32 a.m. Eastern before Gina Williams,
18	Registered Professional Reporter, Certified Realtime
19	Reporter, and Certified Realtime Captioner.
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24	
25	

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24	QUOTATION MARKS ARE USED FOR CLARITY AND DO NOT
25	NECESSARILY REFLECT A DIRECT QUOTE

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1	VIDEOGRAPHER: We are now on the record. Today's
2	date is July 27, 2023, and the time is 9:32 a.m.
3	Eastern.
4	This is the recorded video deposition of Lucy
5	Allen taken in the matter of Apache Corp. Securities
6	Litigation in the United States District Court,
7	Southern District of Texas, Houston Division, Case
8	No. 4:21-cv-00575.
9	My name is Ken Amrhein from Everest Court
10	Reporting. I'm the video specialist.
11	The court reporter today is Gina Williams, also
12	from Everest Court Reporting.
13	All counsel appearing today will be noted on the
14	stenographic record.
15	Will the court reporter please swear in the
16	witness.
17	
18	WHEREUPON,
19	LUCY ALLEN
20	was called as a witness and, after having been first duly
21	sworn, was deposed and testified as follows:
22	EXAMINATION
23	BY MR. RUSSO:
24	Q Good morning, Ms. Allen. As I mentioned, my name
25	is Rick Russo. I represent the Plaintiffs in this case.

1	Could you please just state your full name and
2	address for the record?
3	A Lucy Paige Allen. My work address is 1166 Avenue
4	of the Americas, New York, New York.
5	Q Where are you physically located today?
6	A I'm actually at home in New York City.
7	Q Is anyone in the room with you right now?
8	A No.
9	Q If anybody joins the room today while we're on
10	the record, will you just let us know?
11	A Yes.
12	Q You've been deposed a few times before; correct?
13	A Yes.
14	Q So I'm sure you know the deal, but I'll go
15	through just a couple of quick points.
16	Obviously at any point if you don't understand a
17	question that I ask, please let me know, and I'll do my best
18	to rephrase it.
19	I'm sure you can appreciate this, but in a remote
20	setting like this, it's important that we try our best not
21	to talk over one another. So I will do my best to wait
22	until you finish an answer before I ask the next question,
23	and I'd just ask that you try to wait until I finish the
24	question before you start your answer.
25	Is that fair?

1	A Yes.
2	Q And if at any point you experience any technical
3	issues or anything like that, you know, obviously let us
4	know, and we'll get them taken care of.
5	Do you have any hard-copy documents in front of
6	you right now?
7	A Yes, I do.
8	Q What do you have in front of you?
9	A I have my report, I have Dr. Nye's report, and I
10	have a copy of the Complaint.
11	Q Okay. Do any of those documents have any
12	notations on them besides the actual text of the documents?
13	A No, they do not.
14	Q Apart from this deposition software, do you have
15	any other programs or software open on your computer right
16	now?
17	A I have my Outlook open, which is how I got into
18	this.
19	Q Well, I would ask if you can close
20	I think the point is, I would just ask that
21	while we're on the record here, I'd ask that you refrain
22	from communicating by any means, whether it's cell phone,
23	whether it's text message, whether it's over the computer

I have it so it won't show me anything, but...

with counsel or anybody else.

24

25

Α

1 0 But you're fine with not communicating Okav. 2 with anybody while we're on the record today, either 3 verbally or electronically? 4 Α Yes. 5 And lastly, obviously if at any point you 0 need a break, let me know, and we can accommodate you. 6 7 You understand that you're testifying under oath 8 today? Α 9 Yes. 10 And you understand that this oath has the same 0 11 effect as if you were testifying at trial? 12 Α Yes. 13 Is there any reason why you would be unable to 0 14 give accurate and truthful testimony today? 15 Α No. 16 You're currently a senior managing director at 0 17 NERA; is that right? 18 Α That's correct. 19 0 How long have you been at NERA? 20 Α Over 25 years, close to 30. What are --21 0 22 What are your responsibilities as a senior managing director? 23 24 I manage projects in the areas of securities and Α 25 finance and mass torts and product liability.

1 Part of your work at NERA involves serving as an 0 2 expert witness in litigation matters; correct? 3 Α I have done that, yes. 4 And what else beyond serving as an expert in Q 5 litigation, what are your other responsibilities? I provide economic consulting to clients in a 6 7 number of different industries and types of matters mostly in the areas of securities and finance and mass torts and 8 9 product liability. 10 Over the course of your career, how many times 11 have you been retained as an expert witness in a securities class action? 12 13 I don't know that. Α 14 Is it over 20? 0 I have worked on over 20 --15 Α 16 Was it securities litigation matters? 17 Yeah, I've certainly worked on over 20 securities 18 litigation matters. 19 I don't know if I've always been retained as an 20 expert witness in them. 21 I would say, yes, I have over 20. 22 When were you retained by Apache to provide an 0 expert opinion in this matter? 23 24 I think I was contacted and retained in December Α 25 of last year is my recollection.

1 0 Okav. So that was prior to receiving a copy of 2 Dr. Nye's report? 3 Α That's correct. 4 Q Do you recall who contacted you? 5 I think it was Amy Hefley and/or David Sterling. Α Were you given an assignment at that time? 6 0 7 Α I don't recall specifically, no. 8 Q When did you first start analyzing price impact in connection with this matter? 9 10 Α I can't recall. 11 My basic recollection is that most of the work 12 that I did on this matter occurred after receiving 13 Plaintiffs' expert's report. 14 To the best of my recollection, that's how it 15 happened. 16 In your report you refer to an alternative event study that you conducted in connection with your 17 18 analysis; correct? 19 That's correct. 20 Did you conduct that event study analysis before Q 21 or after you received Dr. Nye's report? 22 Α I don't recall. Why don't we mark as Allen Exhibit 1 23 MR. RUSSO: 24 a copy of your report. It's Tab 1 for the Everest 25 folks.

1 (Exhibit 1 was marked for identification.) 2 MR. RUSSO: Ken, can you just scroll down a page? 3 BY MR. RUSSO: 4 Do you recognize this document as a copy of your Q 5 report in this case? Α 6 Yes. 7 I mean, you're showing me the first page, but 8 that looks correct. 9 MR. RUSSO: Ken, can you turn to page 63 at the 10 bottom right? 11 BY MR. RUSSO: 12 0 Ms. Allen, is that your signature? 13 Α Yes. 14 Q And can you --Just for the record, can you show us page 63 of 15 16 the report you're looking at just to confirm that it's a 17 copy of the final version? 18 Α Sure. 19 You mean show it on the video? 20 Is that what you mean? 21 Yeah, just so we can see the signature, that it 0 22 is the final copy. 23 Α Can you see that? 24 0 Yes. Thank you. I appreciate it. New world. 25 Is there a way to not see the exhibit? Α

1 It's easier for me to understand you if I can see 2 you better, or maybe I can move it over. 3 There we go. I think I just minimized that. 4 Ms. Allen, does the document that we've marked as 0 5 Allen Exhibit 1 contain all of the opinions you intend to offer in this case? 6 7 It summarizes my opinions in this case. Α 8 Q Are there any opinions that you intend to offer in this case that are not referenced or summarized in this 9 10 report? 11 MS. HEFLEY: Do you mean with respect to class certification issues? 12 13 BY MR. RUSSO: 14 I mean as we sit here today, are there any 0 15 opinions you currently intend to offer in this case that are 16 not set out in this report? 17 This report summarizes my opinions regarding Α class certification that I have been asked -- on the topics 18 19 that I've been asked to analyze to date. 20 It summarizes all of the opinions you intend to offer on class certification? 21 22 Α Well, to the extent --23 Yes, I think that's correct. 24 I mean, to the extent that you raise new issues, 25 for example in this deposition, then there may be additional

1 opinions. 2 Q But as we sit here right now, this is -- this is 3 a complete set of the opinions you intend to offer in this 4 case? 5 Α It's a report that summarizes my findings in this 6 case --Does this report summarize --7 Q 8 Α -- on the assignment that I was asked to address. Does this report also summarize all of the price 9 Q impact analyses that you've conducted since being retained 10 11 in this case? 12 Yes, I think it does. Α 13 0 So there are no --14 You haven't conducted any analysis relevant to 15 price impact that is not either referenced or summarized 16 somewhere in this report? 17 Well, what I was asked to do --Α 18 The assignment that I was asked to do was to 19 focus on the focus period, so a part of -- analyze price 20 impact relative to a particular period during the alleged 21 class period. This report summarizes my findings with 22 regard to that assignment. Have you analyzed price impact over the entire 23 24 class period? 25 Α I have not been asked to do that, no.

1 Have you done that? 0 2 Α I have not done that, no. 3 0 Have you analyzed price impact or conducted any 4 analysis of price impact over the portion of the class 5 period that predates the focus period? I was not asked to do that, no. 6 Α 7 And have you conducted any analysis relevant to 0 8 that? I may have conducted analysis that could be 9 Α 10 relevant to that, but that was not my assignment here. 11 Q What analysis was that? 12 I don't specifically recall. Α 13 So before the assignment here --14 Before getting Dr. Nye's report, I don't recall. 15 There may have been some analysis that we did in 16 reviewing the Complaint and looking at the price movements 17 of the stock during the entire class period. 18 So some of that review and analysis could, in 19 theory, be relevant to an analysis of periods before the 20 focus period, but that is not what I have been asked to do. 21 0 Have you changed or altered any of your opinions 22 since you submitted your report in this matter on June 16th? 23 Α I found a couple typos in my report. It does not change my opinions or conclusions, 24 25 but there were a couple typos that I found.

1 And those are just merely typographical 0 Okav. 2 errors; is that correct? 3 Α Yes. Since June 16th, have you formed any new opinions 4 Q 5 that you intend to offer in this case? No, I don't believe so. 6 Α 7 Since June 16th, have you conducted any 0 8 additional analyses that are relevant to price impact? Α I don't believe so. 9 10 Did you draft this report yourself? 0 11 Α I had a team that helped me. Who are the members of that team? 12 0 13 Jorge Baez, Malini Kohli, Tatiana Curiati, Varada Α 14 Shroti. I think that's -- those are the primary members of 15 the team. 16 And did those individuals prepare the draft of 17 this report? 18 Α They assisted me in preparing the report. 19 All of the report was done under my direction and 20 supervision, but each of them assisted in part. 21 Are there any portions of this report that you 0 22 drafted yourself? So the entire report is drafted under my 23 supervision and direction. It was done with the assistance 24 25 of members of my team.

25

Q

1	Q I understand.
2	I was just asking, are there other portions where
3	you had, you know, kind of put pen to paper on the draft, or
4	was it something where your team drafted it, and you
5	reviewed it and signed off on it?
6	A No, it's done as a
7	I mean, typically the process includes doing the
8	analysis to begin with, coming to conclusions, preparing an
9	outline, which I typically talk through with my team,
10	discuss, you know, what might be a good order, and then it's
11	filled in from the outline. So it's a continuing working
12	document.
13	My more junior members of the team tend to
14	prepare tables and charts.
15	Q And what do
16	A And I don't tend to be preparing the tables and
17	charts, but
18	Q What role do the more senior members of your team
19	play with the preparation in the preparation of this
20	report?
21	A The more senior members help manage the more
22	junior members and have a more do less of you know,
23	not entering the data, but will help in reviewing the
24	analysis and discussing the findings.
- 1	

And do they also draft portions of the report?

1 They'll help in doing that. Α That's correct. 2 Q Did you conduct all of the analyses that are 3 reflected in this report yourself, or did the team help you? My team helped me with the entire report. 4 5 everything that's done is --Every analysis that's done is done at least 6 7 twice, so done from scratch, and then a second person will 8 go back and independently do the analysis, and things are checked that way. So everything is checked in that sense. 9 10 So nothing is done entirely by one person in the 11 whole report. 12 How many hours did you spend preparing this 13 report and the analysis reflected in the report? 14 Α I don't know that as I sit here, but my estimate 15 would be something like 70 hours. 16 Do you know how many hours the members of your 17 team spent on it? 18 Α I do not. 19 0 Let's take a look at Appendix A to your report. 20 MR. RUSSO: Ken, I think that starts on page 68 21 of the PDF, if that's helpful. 22 BY MR. RUSSO: 23 Ms. Allen, Appendix A is a copy of your CV; 0 24 right? 25 Α That's right.

1 So if we turn to the portion of this that refers 0 2 to "Depositions and Testimony," which is on page 4 of 3 Appendix A, this reflects the matters where you provided either deposition or trial testimony over the past four 4 5 years; is that correct? 6 Α That's correct. 7 Is this list current as of today? 0 8 Α It was current as of the report -- as of the signing of the report. 9 10 I don't recall having another testimony between 11 this date, but I may have. 12 In addition to these matters -- and there are 0 13 about 28 on here -- are there other matters in the past four 14 years where you've submitted expert reports, but not offered 15 deposition or trial testimony? 16 Α There are other matters, yes. 17 0 Okay. Do you know roughly how many? 18 Α I do not, no. 19 0 How many of the actions that are listed here in 20 Appendix A were securities class actions? 21 Α I don't know. 22 Do you see any, in looking through it, that you 0 can identify as securities class actions? 23 24 The second one, Cabot, I believe is a securities Α 25 class action.

1 The fourth one, McDermott, is a securities class 2 action. 3 Mohawk Industries I believe is a securities class action. 4 5 I believe Newell Brands is a security class action. 6 Arcadia Healthcare I believe is a securities 7 class action. 8 Newell is listed again. 9 Corrections Corporation of America I believe is a 10 11 securities class action. Zillow I believe is a securities class action. 12 13 Those are --14 Those are --The Chicago Bridge & Iron entry also says 15 0 16 securities litigation class action? 17 Α Oh, yes, I think that was a securities class action. 18 19 0 Okav. In any of these securities class 20 actions --21 Let me ask, were you retained as an expert on 22 behalf of the Plaintiffs in any of these securities class actions? 23 In the ones I just mentioned, I don't think so, 24 Α 25 no.

1 Have you ever submitted an expert report or 0 2 testified in a securities class action where you opined that 3 a misrepresentation or an omission impacted a company's 4 stock price? 5 Α Can you repeat that question? Sure. 6 0 7 Have you ever submitted an expert report or 8 testified in a securities class action where you opined that 9 a misrepresentation or an omission impacted a company's 10 stock price? 11 Α Not that I can recall. 12 In a few of the cases that are listed here in 0 13 Appendix A, the Courts in those cases issued opinions on 14 class certification that addressed your price impact opinions; right? 15 16 Yes, that's probably true. Α 17 0 Do you recall that the Court in the Acadia 18 Healthcare case issued an opinion on class certification 19 that referenced your price impact opinions? 2.0 I don't actually, no. Α 21 Do you recall that the Court in Chicago Bridge & 0 22 Iron issued an opinion on class certification that 23 referenced your opinions? 24 I don't specifically recall that. Α 25 If you gave me a multiple choice test, I think I

1	might say that it happened, but I don't have a specific
2	recollection.
3	Q Do you
4	Is it your practice to review any class
5	certification opinions that are issued in cases where you've
6	served as a price impact expert?
7	A I do typically try to review decisions.
8	Q Is it your practice to review any decisions where
9	you're mentioned by name?
10	A Generally my practice to try to keep track of
11	what has happened in cases that I have been involved in is,
12	typically the clients generally will notify us, but I don't
13	have a system where I, you know, search for my name or keep
14	track of it in that sense.
15	Q Why don't we turn to Appendix B.
16	A Yes.
17	Q What's reflected in Appendix B?
18	A This is a list of the materials considered in
19	preparing this report.
20	Q Does Appendix B include all of the materials you
21	considered in forming your opinions in this matter?
22	A Yes, that was the intention to be inclusive and
23	include all the materials considered.
24	Q Okay. If you look through Appendix B, you'll see
25	it's 32 pages long. There are over 700 documents listed.

1	Did you review all of these documents yourself?
2	A No.
3	Q Did someone on your team review every one of
4	these documents?
5	A No, not in their entirety.
6	These are
7	These are materials that we had obtained in
8	connection with this matter, and so they were considered.
9	Q Okay. So there are
10	There are materials listed here in Appendix B
11	that you and your team considered, but did not review?
12	A Yes, or did not review in their entirety.
13	Q Okay. Can you explain that?
14	Can you explain how you can consider a document
15	if you haven't reviewed it?
16	A Sure.
17	So my understanding of the rules of expert
18	disclosure are that you need to not only disclose everything
19	that you actually relied upon, but you need to disclose what
20	was considered in in preparing an expert report.
21	So, for example, to the extent that the client
22	turns over a whole database of material or materials, we may
23	go through those materials and consider which ones may or
24	may not be relevant to the analysis that we're doing.
25	So these are the materials that we obtained and

1	had access to and considered analyzing as part of this
2	project.
3	So, for example, there are SEC filings. We
4	obtained SEC filings for Apache over a long period of time,
5	and some of them we considered in part because they were
6	relevant to the analysis, and others SEC filings can be
7	quite long, and there are other SEC filings that were not
8	turned out not to be relevant to the particular analysis
9	that we were doing.
10	Similarly for
11	There's some deposition testimony that was
12	provided to us, and I'm not sure what other documents there
13	are.
14	Some of the analyst reports we may have not
15	reviewed in their entirety, but we had access to them. We
16	had obtained them.
17	Q And how did you determine
18	With respect to the analyst reports, how did you
19	determine which ones you would review and which ones you
20	maybe wouldn't review or would review in part?
21	A So depending on each of the parts of the analysis
22	that we're doing.
23	So, for example, one of the things that we did is
24	focus on the alleged corrective disclosures where Plaintiffs
2.5	had alleged the truth was coming out during the focus

1 period, and we reviewed all analyst reports in detail after 2 and around those periods. 3 We reviewed specific -- searched all of the 4 analyst reports for discussion about Alpine High. 5 So there are various topics that we were particularly interested in, so to the extent that we were 6 7 tracking how analysts had changed their opinions, for 8 example, about Alpine High. So, I mean, I sort of walk through the various 9 10 parts of my report and explain. For each analysis in each 11 section of my report, there would be potentially different 12 analyses and searches that were done through the analyst 13 reports. 14 So let's talk about the corrective 0 disclosures where you said you focused on the reports after 15 16 and around those periods. 17 How did you do that? Did you go out, you know, a week before and a 18 19 week after? 2.0 Did you go a month before, a month after? How did that --21 22 What limitations were applied? 23 So it's particularly important to look at them after the alleged corrective disclosures and then to see how 24 25 analysts changed their views from before to after the

1 corrective disclosures. 2 So I think we obtained -- tried to obtain all --3 We obtained all of the analyst reports that we 4 were able to throughout the entire focus period so... 5 0 But around --So let's talk about after the corrective 6 7 disclosures. 8 Did you review all analyst reports going, you know, a day after the corrective, a week after, a month 9 10 after? 11 What limitations did you apply for purposes of 12 that analysis? 13 Α No limitations. So the analyst reports throughout the focus 14 15 period were all reviewed. 16 You reviewed every one of them? 0 17 Α My team and I, yes, reviewed every one of them. When you say you searched them for things like 18 0 19 Alpine High, was that an electronic search? 2.0 Α That would be one of the things we would do. 21 Are there materials that you reviewed, but didn't 0 22 consider, in forming your opinion in this case? Α 23 No. By definition, my understanding of "considered" 24 is that it's broader than "reviewed." 25

1 So my understanding of the federal requirements 2 of what to disclose in an expert report is everything that 3 was reviewed and more. 4 So everything that was relied upon, everything 5 that was reviewed, and the broadest categories, everything that was considered in forming the opinions. 6 7 The broadest category that's relevant to my report is considered, and that's what I have listed in 8 Appendix B. 9 10 Did you personally read the Complaint in this 0 11 matter? 12 Α Yes. 13 And why did you do that? 0 Okay. 14 Α To understand what Plaintiffs are alleging. And why is it important to understand what 15 Okav. 0 16 Plaintiffs are alleging in connection with opining on price 17 impact? 18 Α Because I am analyzing the alleged misrepresentation, so consistent with what the Plaintiffs 19 20 are alleging. 21 I mean, I think there are a number of reasons. 22 One is to understand what are the alleged misrepresentations, what are the dates of the alleged 23 24 misrepresentations, what are Plaintiffs alleging was false 25 or misleading about the alleged misrepresentations, what are

1 Plaintiffs alleging is when the truth about the allegedly 2 false and misleading misrepresentations came out, so what 3 Plaintiffs are alleging are alleged corrective disclosures. All of those I think are important aspects of 4 5 analyzing price impact and are contained in the Complaint. Why, in conducting a price impact analysis, is it 6 7 important to know what information the Plaintiffs allege was 8 misrepresented or omitted? Why is knowing that piece of information 9 10 important to your analysis? 11 Α Well, it's an analysis of what -- whether the 12 alleged misinformation is impacting the stock price. 13 So it's just a matter of understanding what 14 Plaintiffs are alleging is the misinformation. 15 Q So when you're opining on price --16 When you're opining on whether an alleged 17 misstatement or omission impacted a stock price, it's 18 important to know what the misrepresented or omitted 19 information was; is that fair? I think it's part of understanding what 20 21 Plaintiffs are alleging. 22 I mean, I will say it's not --23 Plaintiffs' claims and allegations may --24 Yes, I think it's a just --25 I think it's a matter of understanding what

1 Plaintiffs are alleging are the false and misleading 2 statements. 3 At the Motion to Dismiss stage of this case, did 4 the Court dismiss any of the claims that are alleged in the 5 Complaint? I don't recall that. 6 Α 7 No, I --8 0 Let me ask this way. For purposes of conducting your price impact 9 10 analysis, is it your understanding that all of the alleged 11 misrepresentations and omissions alleged in the Complaint are still at issue in the case? 12 13 Α I think that's correct. 14 It's possible my report says something different, 15 so I would stand by my report. 16 Yes, that's my recollection. 17 0 You're not aware of any misstatements or any 18 corrective disclosures or any claims that have been dismissed? 19 I don't think so, but if my report says 20 Α 21 differently, then I just am not remembering it as I sit 22 here. 23 I have meant to in my report be clear about what 24 are the alleged misrepresentations and misstatements, and I 25 think I've attached them all. I have an exhibit in my

1 report. And there are a number of them, and how you count 2 3 them is a little bit confusing on whether some are said on 4 the same day or what day is the reaction. 5 But my recollection as I sit here is that there aren't ones that have been dismissed from the case. 6 7 Why don't we look at the list of news Okav. 8 articles, which is on page 27 of Appendix B. 9 Do you see there's a heading "News Stories on 10 Apache"? 11 There are 23 articles listed here; right? 12 Α Yes. 13 And if you look at entries 17 through 23, those 0 articles were published after the end of the class period; 14 15 right? 16 Α That's right. 17 So in forming your opinions in this case, you 0 considered 16 news articles that were published about Apache 18 19 during the class period? So more than this. 20 Α So this is a list I think of ones that are cited 21 22 in the report, but we did a news search throughout the class 23 period of all articles on Apache. So we have a much broader 24 set of news articles. 25 I think this list is just --

1 So if you look at the heading of this particular 2 section, it says, "including these," so I think these are 3 just ones that are actually cited in my report. So this isn't a complete list of all the news articles that were 4 5 considered. The news articles that were considered is a much, 6 7 much broader list than this. 8 0 But you had said a few minutes ago that this was all of the materials, right, that you considered? 9 10 I said that Appendix B was meant to be 11 comprehensive and list all the materials considered. 12 And so what it says is, "News Stories on Apache, 13 Other E&P Companies and Oil and Gas Industry from Factiva, 14 Google and Bloomberg." 15 Okay. Q 16 So that is lots of stories, and then it says, Α 17 "including these." 18 So these are just a subset of all the ones that 19 we --20 There were way too many to list, but I think if 21 we --22 I don't know if we did a turnover of the documents, but we have -- we have a file that has all of the 23 24 news stories that were considered, and it's many more than 25 this.

1	Q Okay. And how did you narrow that file of all
2	the news stories down to these 23 that you've cited in your
3	report?
4	A These are just ones that are cited. So these are
5	just
6	When we, in the report, are explaining the
7	findings, these are examples of points that we were that
8	I am making in my report. That's all.
9	Q So for this broader set of news articles, did
LO	your team read all of them, or were you running searches for
L1	articles that hit on search terms and things like that?
L2	A We didn't read all of the
L3	No one would have read all of the stories, but we
L4	would have obtained all of them and then looked, for
L5	example, you know, was there any article that mentioned
L6	Seeking Alpha, or was there
L7	Yeah, we look at them for various different
L8	reasons.
L9	Q And when you say you looked
20	A I didn't see
21	Yeah, so there are very many reasons that we
22	would look through all the stories that we had.
23	We looked through them many times to see what's
24	happening on various different days to
25	Everything that was analyzed in my report, we

25

1 would review the news stories in that same context. 2 Q And when you say you looked for, for example, 3 articles about Seeking Alpha, was someone manually reviewing all of the news articles, or was it an electronic search 4 5 that was done? Well, so maybe the Seeking Alpha wasn't the best 6 7 example of something because one of the things that we did 8 do is not only look through all the stories on Apache, but 9 just looked to see if anyone was mentioning the Seeking Alpha's story that is the alleged corrective disclosure that 10 11 Plaintiffs allege in the Complaint as of the end of the 12 class period. 13 So that would have been a separate search in 14 addition to the other searches that we have done. 15 Q Okav. And that's an electronic search? 16 Α Yes. 17 Putting aside the Seeking Alpha piece, when you 0 18 were combing through these articles to look for ones to 19 reference in your report, was it a manual process or was it, 20 again, applying search terms and narrowing down the list 21 that way? 22 Α So it's not that we're narrowing down the list and finding a list of however many this is, 23 to cite. 23 24 We're doing all the analysis that's described in

the report, and in the process of doing that analysis we're

	explaining the findings, and part of the explaining the
2	findings at certain points is, you know, some of the
3	articles I think may explain what the you know,
4	informational about, whatever, Waha Hub gas prices and
5	what's happening with them, you know, so we will cite
6	something that may
7	I mean, I'll have to look at what is the reason
8	that each one of these
9	I believe each one of these is listed
10	independently in here because it's an actual cited report.
11	That's all.
12	Q Okay. I'm asking a little more generally.
13	So you said you have this repository of news
14	articles that was too big for anybody to review.
15	How did you
16	How did the review process work for them?
17	Were you applying date restrictions and reviewing
18	everything in between certain dates?
19	Were you searching everything for search terms?
20	I'm just trying to understand that process of
21	making sense of these materials.
22	A So I don't think I said that we had a repository
23	of stories that was too big for everyone to review. We did
24	not read every story.
25	One of the things that we did is do a news search

25

1	through Factiva using the company name as a search term and
2	obtain all the news stories about Apache during the time
3	period, and then that is one of our materials considered was
4	downloading all news stories in Factiva by date.
5	Q And then from there how did you determine which
6	ones to read, which ones to consider?
7	A They were all considered.
8	So they were all considered, and there were
9	various reasons that we considered them.
10	And I could go through the parts of my report and
11	explain to you, for each analysis and each part of my
12	report, what we would have or may have considered those news
13	stories for.
14	Q After you conducted that search for the company
15	news, right, you said you applied that search term, did you
16	review every document did you read every document that
17	was returned?
18	A I did not read every news story, no.
19	Q Did someone on your team review every one that
20	hit on Apache?
21	A No, I do not think so.
22	But again, I could then go through all the
23	analyses and parts of my report and, for many of the
24	analyses there would be a review through, we call it a

chronology, a chronology of news stories, for a number of

1	different reasons.
2	Q And how did you and your team determine which
3	news articles you would read and which ones you wouldn't
4	read?
5	A I would have to go through my report for each
6	analysis, and I could describe what happened for each type
7	of analysis.
8	So one example would be that after an alleged
9	corrective disclosure, the news stories would be reviewed to
10	see if there's additional information about why the stock
11	price may or may not be reacting or what information would
12	the market be understanding from an alleged corrective
13	disclosure, for example.
14	Q Did you speak to any current or former Apache
15	employees in connection with forming your opinions?
16	A I don't believe I did, no.
17	Q Did you review any internal Apache documents in
18	connection with forming your opinions?
19	A Not that I recall, but if I did, it should be
20	cited in here.
21	So one
22	Sometimes it could be an attachment to a
23	deposition transcript. That's the only thing I can think
24	of, but I don't have any recollection of that.
25	Q In connection with your work in this matter, did

1 you ever ask counsel whether Apache had any internal 2 documents bearing on price impact? 3 I did not ask that question. I'm not sure what 4 that would mean exactly. I don't --5 So I'm analyzing whether the alleged misrepresentations impacted the stock price, so whether 6 7 there's a link between that. 8 That isn't something that a company would typically have the answer to that or is not typically the 9 10 sort of analysis a company would do. 11 Q And in connection with this case, you didn't ask 12 counsel whether the company did have any answers on that? 13 Α I did not ask them that, no. 14 If we look at the legal decisions on page 29, Q there are 11 cases cited here. 15 16 Are you offering any legal opinions in this case? 17 Α No. 18 And so why were you considering legal opinions in 0 19 the course of forming your price impact opinions? 20 Α These are again ones that are cited in my report, 21 and I could look to the cites to see why they were cited. 22 0 And are these cases that you found Okav. 23 vourself? 24 Α Well, some of them I was involved in myself. 25 I'm not sure what you mean by found myself.

1	Q Let me ask this: Are there do you recall any
2	legal decisions that you reviewed on class certification
3	that are not listed here in these 11 cases?
4	A I have seen
5	I'm not even sure if these are all on class
6	certification. Maybe they are because it says that, but I
7	have certainly seen a number of decisions on class
8	certification.
9	These are listed because they're cited in my
LO	report. And I could look to see why they're cited, but
L1	offhand I don't know specifically what is the reason for
L2	citing them each one of them.
L3	Q Did you check Appendix B for accuracy and
L4	completeness before you included it in your report?
L5	A I looked through it. I did not do a detailed
L6	analysis myself. I rely on my team for that.
L7	Q Okay. Does your team have a process for checking
L8	this list of materials considered for accuracy and
L9	completeness?
20	A Yes.
21	Q Have you considered any additional documents
22	since the time you submitted your report?
23	A I don't believe so, no.
24	Q Let's turn to Appendix C, which I think you
25	referenced earlier.

1	What is Appendix C?
2	A It's a list of the alleged misrepresentations
3	made during the alleged class period.
4	Q And why did you include this Appendix in your
5	report?
6	A So I have a list of them. The Complaint is very
7	long, and I think it's handy to know what they are, and I
8	think
9	What I am analyzing are the alleged
LO	misrepresentations and price impacts, so I think it's
L1	helpful to have a list of them.
L2	And typically they
L3	Oftentimes there are it is simpler and not as
L4	lengthy a list, and it is something I would typically put at
L5	the very beginning of my report and say, here are the two
L6	alleged misrepresentations, and this is what they said.
L7	But since they're quite lengthy, it was too long
L8	to put in the body of my report, so I thought it was easier
L9	to put it as an Appendix.
20	Q And who prepared this document?
21	A My team did. I don't know specifically.
22	So, again, it would have been
23	At a minimum, there would have been someone
24	checking it or doing it again.
25	Q And do you know what the source data was that was

1	used to put this together?
2	A The Complaint.
3	Q And did you or your team check this document for
4	accuracy and completeness before you included it in the
5	report?
6	A My team did, but I personally don't recall
7	I don't think I checked this personally, but my
8	team did.
9	Q For purposes of offering your opinions in this
10	case, have you assumed that the market for Apache common
11	stock was efficient throughout the class period?
12	A I have.
13	Q For purposes of offering your opinions in this
14	case, have you assumed that all of the allegations in the
15	Complaint are true?
16	A I'm assuming that the alleged statements are
17	false and misleading as alleged.
18	I'm not assuming that
19	You know, for example, the Complaint alleges that
20	the stock price dropped because of, you know, for example,
21	the Seeking Alpha story. So I have found that not to be
22	true.
23	So I'm not assuming that that is true, but I am
24	assuming the statements are false and misleading as alleged.
25	Q Are you assuming that all of the five alleged

	corrective discrosures in this case corrected the arreged
2	misstatements?
3	A No, I'm not making that assumption.
4	Q Okay. So you're not assuming that the corrective
5	disclosures corrected the misstatements, and you're not
6	assuming that the corrective disclosures caused the stock
7	price to change; is that correct?
8	A I am not making those assumptions.
9	I am assuming that the alleged misstatements are
LO	false and misleading as alleged. And one of the things that
L1	I am analyzing is whether the alleged misstatements are
L2	impacting stock price, including the alleged corrective
L3	disclosures.
L4	Q Are you assuming that any of the alleged
L5	corrective disclosures corrected the alleged misstatements?
L6	A I'm not particularly making assumptions about
L7	that, no.
L8	Q Are there any other assumptions you've made in
L9	connection with conducting your analysis?
20	A I don't believe so, no.
21	Q What is
22	In the context of securities litigation, what is
23	price impact?
24	A So what I am analyzing and what I understand to
25	be the question is whether the alleged misrepresentations

Α

1 impacted, affected, moved the stock price. 2 I understand price impact to be an analysis of 3 whether, you know, in this case, alleged misrepresentations moved a stock price. 4 5 And you understand that at the class 0 certification stage the price impact analysis is relevant to 6 7 determining whether this brought on the market presumption of reliance? 8 I think you're asking me a legal guestion. 9 Α My understanding is that Plaintiffs, rather than 10 11 proving individual reliance on the alleged 12 misrepresentations, can claim that the market is efficient 13 in that -- and if the market is efficient, that the alleged 14 misrepresentations would be incorporated into the stock price and that Defendants can analyze -- Defendants can show 15 16 that there's -- sever the link and show that there is not a 17 link between the stock price and the alleged 18 misrepresentations, then they --19 And then I think that does, as you say, for class certification, make it so that Plaintiffs then have not 20 shown the element of reliance. 21 22 Do you have an understanding of what a 0 defendant's burden is with respect to price impact with 23 24 class certification?

I think it's the preponderance of the evidence,

Τ	but it's defendant's burden is my understanding.
2	Q And defendant must demonstrate, by preponderance
3	of the evidence, that the alleged misstatements had no
4	impact on the company's stock price; right?
5	MS. HEFLEY: Objection, calls for a legal
6	conclusion.
7	A Yeah, my understanding is preponderance of the
8	evidence as sort of more likely than not is what I
9	understand preponderance of the evidence to be.
10	BY MR. RUSSO:
11	Q More likely than not what? More likely
12	A That there is not a link between the alleged
13	misrepresentations and the stock price.
14	Q What is
15	What's the difference between
16	Is there any difference between the price impact
17	analysis you conducted in this case and a loss causation
18	analysis?
19	A I don't understand your question.
20	Q Have you served as a causation expert in a
21	securities class action before?
22	A I have analyzed loss causation.
23	Q And how is that analysis of loss causation
24	different from the price impact analysis you've conducted in
25	this case?

1	A The loss causation is whether there is
2	The question is whether there are damages or a
3	loss, which is not the same thing as whether not
4	necessarily the same thing as whether an alleged
5	misrepresentation impacts the stock price.
6	So, for example, it could impact the stock price,
7	but it could be that the Plaintiffs do not suffer any loss.
8	Q I understand that the conclusions that you draw
9	may be different.
10	I'm just asking, the analysis, how does the
11	analysis of price impact differ from the analysis of loss
12	causation?
13	A I think that there certainly could be overlaps in
14	the analysis, but this is
15	I'm not analyzing damages or whether there's a
16	loss or whether individual Plaintiffs have suffered a loss.
17	There's nothing about my analysis here
18	It might
19	It might tell you something about that, but that
20	is not the focus of my analysis.
21	Q And again, I'm not asking you about a damages
22	calculation or analysis.
23	I'm asking about an analysis of whether the
24	alleged misstatements caused a loss.
25	How is that loss causation analysis different

1 from the price impact analysis you've conducted here? 2 Α Loss causation is, you know, specific to 3 Plaintiffs. 4 So this is whether the alleged misrepresentations 5 impacted the stock price. This is not --6 7 I'm not looking at who the Plaintiffs are or what 8 happened to them or when they purchased or when they sold and, you know, whether they would, absent the alleged 9 misstatements, would they have been in a different 10 11 situation. So it has nothing to do with --12 I mean, it may be relevant to that question, but 13 I am not looking at whether there is a loss caused to 14 alleged Plaintiffs. 15 How about the analysis of whether a loss was 0 16 caused by misstatements, how does that analysis differ from 17 price impact? 18 Α I don't think you can say whether a loss was 19 caused if you're not saying --20 To the company or to individual Plaintiffs? 21 I'm not sure what your question is referring to. 22 If the Plaintiffs are the --0 My analysis has nothing to do with --23 Α 24 I'm not analyzing any individual Plaintiffs. 25 You're analyzing whether a stock price decline Q

1 was caused by an alleged misrepresentation, correct, as part 2 of your analysis here? 3 MS. HEFLEY: Objection, misstates testimony. That's not what I have been asked to do. 4 Α 5 My analysis may speak to that question. So there may be overlaps between a loss causation analysis and a 6 7 price impact analysis, but what I have done is analyze 8 whether the alleged misrepresentations impacted the stock 9 price. BY MR. RUSSO: 10 11 Q And that analysis includes an analysis of whether 12 they caused a loss on an alleged corrective disclosure date; 13 right? 14 No, I've analyzed --Α 15 It may help answer that question, but that is not 16 the question that I have been asked to answer. 17 So I think there can be overlap in the analysis. 18 And I think the conclusions that can come from a price impact analysis, some of those conclusions may apply to 19 20 other parts of a securities litigation case, but I am 21 analyzing price impact. 22 0 If we can --23 If you can turn to paragraph 20 of your report 24 real quick. 25 Α Sure.

1 Here in the second sentence you say there are at 0 2 least two ways to analyze price impact; right? 3 Do you see that? 4 Α I don't, actually. 5 Where am I? Paragraph 20, the second sentence. 6 Q 7 Α I see it now. 8 Q The first way you say is, quote, directly by analyzing the market reaction following an alleged 9 10 misrepresentation, including analyzing the stock price 11 movement and examining market and analyst commentary 12 following the alleged misrepresentation; right? 13 А Yes. 14 That analysis is sometimes referred to as Q 15 front-end price impact; right? 16 I think that's right. Α 17 The second way, which is on the top of page 11, 0 18 you say is indirectly by analyzing the market reaction to a 19 disclosure that is corrective of an alleged 20 misrepresentation. 21 That analysis is sometimes referred to as 22 back-end price impact; right? 23 I think that's correct. Α 24 0 And I'm just asking, so if I use the terms 25 "front-end" and "back-end" today, you understand what I'm

1 talking about? 2 Α I think so, yes. 3 MS. HEFLEY: Rick when we get to a stopping 4 point, can we take a quick break? 5 MR. RUSSO: Yeah, we can stop now. That's fine. Okay. 6 MS. HEFLEY: Thank you. 7 Do you want to just take five or ten MR. RUSSO: 8 minutes? 9 MS. HEFLEY: That's great, yeah, just need a 10 quick restroom break. 11 VIDEOGRAPHER: Off the record 10:42 a.m. 12 (Recess was taken.) 13 Back on the record 10:53 a.m. VIDEOGRAPHER: 14 BY MR. RUSSO: 15 Ms. Allen, one follow-up question on what we 0 16 discussed previously. 17 Are you expressing an opinion in this case that any of the alleged corrective disclosures are not actually 18 19 corrective? 20 Α Well, I am saying that the last alleged 21 corrective disclosure has no new information about Alpine 22 High, about Apache. 23 So, yes, I am saying that that is not corrective. 24 0 And so you've mentioned the March 2020 25 corrective.

Which other --

Are there any other alleged corrective disclosures in this case where you are offering an opinion that those disclosures were not corrective?

A I mean, my assignment, again, is to analyze price impact. So in the course of doing that, I am analyzing whether the alleged misrepresentations, whether there's a link between them and the stock price during the focus period, including at the time of the alleged corrective disclosures.

I am also finding that the second alleged corrective disclosure, the October 25th alleged corrective disclosure with the announcement of the resignation of the engineer Keenan, that that is not disclosing any new information about Alpine High.

- Q And when you say "the second corrective disclosure," you're referring to the second alleged corrective disclosure during the focus period?
  - A During the focus period, that's correct.
- Q And so are you offering an opinion in this case that the October 25, 2019 alleged corrective disclosure was not actually corrective?
- A So my analysis is on price impact and whether there's a link between the alleged misrepresentations and the stock price.

1	In the course of doing that, I am finding that
2	there is no new information about Alpine High that is
3	revealed to the market and/or is understood by the market
4	from the resignation of Steven Keenan on you know, after
5	the October 25, 2019 alleged corrective disclosure.
6	So my
7	I think you could characterize that as finding
8	that that alleged corrective disclosure is not corrective,
9	but what I am analyzing is whether the alleged
10	misrepresentations are impacting the stock price.
11	And there is no impact on the stock price
12	relative to any of the alleged misrepresentations from that
13	announcement on October 25, 2019.
14	Q Why don't we
15	Well, let me ask you this: Are you expressing an
16	opinion in this case that the April 23, 2019 corrective
17	disclosure is not corrective?
18	A That's not particularly
19	I think you perhaps could interpret the
20	conclusions that I find in my report that way. The market
21	is not understanding anything new about Alpine High
22	Well, I'm not particularly making that
23	conclusion, no, I would say.
24	Q Okay. So getting back to what we were talking
25	about just before the break when we were talking about the

two ways to analyze price impact, you said that -- or your report says that the price impact analysis focuses on the stock price reaction to the alleged misstatements and the stock price reaction to the alleged corrective disclosures; is that right?

A I think that's correct.

Q What if a company's stock price experiences a statistically significant stock price movement, but that movement isn't in response to a misstatement or corrective disclosure?

Is that movement relevant to price impact?

A You'd have to be more specific about what your hypothetical is.

Analyzing price impact, there could be situations where that might have some relevance to an analysis. It's not directly relevant, I don't think, to the question, but it might be used somehow in some sort of analysis.

I mean, for example, you might show that announcements about, I don't know, whatever, some specific topic, the color that you decided to paint something, you know, that all the announcements about the color that something is painted did or didn't, you know, move the stock price or impact the stock price, when the allegation itself might be about a very specific color or very specific time period, and so it somehow could be relevant to look at other

1	time periods where something similar has happened and do an
2	analysis of it.
3	So I wouldn't say that there wouldn't be
4	circumstances where it could be helpful to an analysis of
5	price impact to analyze the impact of announcements that are
6	not the actual misrepresentation, but I think you'd have to
7	be
8	Your hypothetical, there are circumstances where
9	it could perhaps be relevant to some sort of analysis.
10	Q Okay. But putting aside those particular
11	circumstances, in general the price impact analysis focuses
12	on the stock price reaction to the alleged misstatements and
13	the alleged corrective disclosures; is that correct?
14	A Not always. I mean, I would say that can be a
15	more
16	It's likely more relevant to be analyzed in the
17	alleged misrepresentations and alleged corrective
18	disclosures.
19	It isn't to say that it couldn't possibly also be
20	relevant to analyze other dates.
21	Q Does there need to be both front-end price impact
22	and back-end price impact for price impact to exist?
23	A Again, I think you'd have to explain what you're
24	talking about.
25	Q Sure. Let's let's assume we have

1 Assume there's a case where there's one 2 misstatement and two corrective disclosures. 3 If there's a statistically significant stock 4 price reaction in response to that initial misstatement, 5 does price impact exist? So if the alleged misstatement causes the price 6 7 to move when made? 8 Q Yes. I think that's evidence that there's price impact 9 Α 10 from the alleged misstatement. 11 Q And in that situation do you also need to analyze 12 whether back-end price impact exists on those two corrective 13 disclosures? 14 Α I mean, it depends on what you're -- what you're 15 analvzing. So I think if --16 Information can potentially impact the stock price when made, and then the world can change for various 17 18 reasons, and that information can no longer be reflected in 19 the stock price. 20 The stock price can during a period no longer move relative to it that information. That information is 21 22 no longer important to the stock price. It doesn't move with that information. 23 And so if your question is, is that information 24 25 or misinformation impacting the stock price during some

other period of time, then one way of analyzing that would be -- can be when that information is corrected.

So, for example, something could have an impact when made. The world can change, and that no longer becomes important to the stock price, or the stock price no longer reacts with that kind of information. And then when it's corrected, that could no longer have an impact and not be relevant to the stock price.

Q And in that scenario is it your view that that analysis of back-end price impact could destroy the price impact that existed at the time of the misstatement?

A It's not the analysis that would destroy it. It would be that something has changed in the world so that something is no longer -- that it's not -- it's no longer impacting the stock price.

It could be many reasons. It could be that the information is not important at that point for evaluation of the stock price.

It could be that the stock price is not -- the market is focused on other things or the market is not efficient and not moving relative to that, or there could be some -- the company could be in a different position where they have essentially hedged whatever was the --

I mean, there's just a whole host of different scenarios that can make that happen.

1 0 Let me ask you this: If you were analyzing price 2 impact and you find clear evidence of front-end price 3 impact, but no evidence of back-end price impact, would you offer an opinion that no price impact exists? 4 5 Α I think if I find price impact -- when a statement is made, I find that the stock price is reacting, 6 7 and the question is, was there price impact at the time that 8 that statement was made and I have found evidence of that, then I would say that I have found evidence of that, if 9 10 that's the question. 11 If the question is, was that statement affecting 12 the stock price at that point in time, then if you have 13 evidence that it was affecting the stock price at that point 14 in time, I think that's somewhat chronological. If that is the question and that is what I have 15 16 evidence of, then I think that would be the answer to that 17 question, but I'm not sure that's a meaningful question 18 because it seems to just be true chronologically. 19 When you analyze price impact in connection with 20 securities class actions, are you analyzing whether the 21 misstatement had any impact on the stock price or whether 22 the misstatement impacted the stock price throughout the entirety of the class period? 23 24 It depends on the --Α 25 It depends on the situation in the question.

1	So here I've been asked to focus on a particular
2	period.
3	Q Let's look at paragraph 3 of your report.
4	Paragraph 3 you state, "I find that there is no price impact
5	and no link between any of the alleged misrepresentations
6	made during the alleged class period and Apache stock price
7	during the focus period."
8	Do you see that?
9	A Yes.
LO	Q We'll talk about the focus period piece in a
L1	minute, but you use the word "link" here, and you said it a
L2	few times this morning.
L3	What do you mean when you use that term?
L4	A I think the term is a term used by the Supreme
L5	Court, I believe, in one of the Halliburton decisions, so
L6	I'm intending it to have the same or similar meaning to
L7	that, which is whether the stock prices being moved, so
L8	impacting or moving the stock price.
L9	Q Are you finished?
20	A Yeah, that's all.
21	Q If you
22	Let's go back to that answer.
23	You said "link" means whether the stock price is
24	being moved.
25	Moved by what?

A The alleged misrepresentation or the alleged -- or the correction of the alleged misrepresentation.

Typically here the alleged misrepresentations are of the type that are alleged to cause the stock price to be higher than it would otherwise, and the correction is that the stock price goes down.

So that is the more typical direction in a securities class action, and that is the direction that's alleged in this Complaint that the misrepresentations inflated the stock price, not deflation where everything would be the opposite.

Q If you --

Coming back to what we were just talking about, if you find a statistically significant stock price increase in reaction to an alleged misstatement or response to an alleged misstatement, is that evidence of a link between the alleged misstatement and movements in Apache stock price?

A It could be.

I mean, if the stock price is reacting to something other than the alleged misrepresentation, then --

If an alleged misrepresentation is causing the stock price to go up and/or if the correction of alleged misrepresentation is causing the stock price to go down, then that is a link, and those are evidence of price impact.

Q Okay. You said if a misrepresentation causes the

1 price to go up and if the correction causes it to go down. 2 I'm asking just about the former. 3 If an alleged misrepresentation causes a stock price to go up, is that evidence of a link between the 4 5 alleged misstatement and movements in Apache stock price? I think if an alleged misrepresentation 6 7 causes a stock price to move, that is evidence of alleged --8 of price impact at that point in the stock price from that 9 alleged misrepresentation. 10 And for purposes of analyzing price impact, how 11 do you determine whether or not a link exists between the 12 misrepresentations --13 Well, let me state it this way: Let's assume 14 that there's a situation where you don't have a statistically significant stock price increase in response 15 16 to an alleged misstatement. 17 How do you determine whether or not a link exists 18 between the alleged misrepresentations and the alleged 19 corrective disclosures? 20 Α I'm not understanding that. I'm sorry. 21 Part of your analysis in this case was 0 22 determining whether there was a link between the corrective disclosures and the alleged misrepresentations; right? 23 24 I'm analyzing whether there's a link between the Α 25 stock price movement and the alleged misrepresentation.

1 So I'm analyzing, during the focus period, 2 whether there's any link between Apache stock price movement 3 and the alleged misrepresentation. So whether there's any evidence of the stock 4 5 prices going up during the focus period because of the alleged misrepresentations and whether there's any evidence 6 7 of the stock prices going down during the alleged -- during 8 the focus period and right after because of alleged corrective information from the alleged misrepresentation. 9 10 So I'm analyzing whether the alleged 11 misrepresentations during the focus period have -- are 12 causing the stock price to go up and whether there's any 13 evidence they're causing the stock price to go down when the 14 alleged misrepresentations are corrected. 15 0 In paragraph 4 of your report, you find that the 16 corrective disclosures show no price impact and no link to any of the alleged misrepresentations; correct? 17 18 Α That there's no --19 I do say that, that there's no link in terms of 20 no price movement relative to the alleged 21 misrepresentations. 22 Look at 4A. The second sentence you say, "The 0 deferral rather than having any link to the alleged 23 24 misrepresentations made during the alleged class period." 25 So you are analyzing whether there's a link

1 between the misrepresentations and the information disclosed 2 on the corrective disclosure dates; right? 3 Α Yeah. It's really whether there's any link from the price movement on that date, but that's -- that's 4 5 correct. I'm not --6 7 That's right. 8 What I mean by "link" is whether it -- a link in terms of the price movement. 9 10 So what --0 11 Α Not link in terms of, does it have anything to do 12 with the alleged misrepresentations. 13 So you haven't analyzed whether the corrective 14 disclosures in this case have anything to do with the 15 alleged misrepresentations? 16 I would say I have analyzed whether they have 17 something to do with it. 18 But what I mean by no link is not that they have 19 nothing to do with it, is that they're not -- that there's 20 no price movement. There's no price movement that's linked to the 21 22 alleged misrepresentations. 23 I'm not saying whether there's some sort of topical link. 24 25 Well, you did say earlier that you are opining Q

1 that certain of these disclosures are not corrective, right, 2 or you're offering opinions that could be construed as 3 these --4 Α That's right. That's right. 5 Does that require you to analyze whether there's Q a link between the alleged misrepresentations and the 6 7 corrective disclosures? But what I am doing in the link that I am 8 Α 9 severing is between price movements, that alleged 10 misrepresentations are not impacting the price. They're not 11 causing the price to go up when the alleged 12 misrepresentations are made, and they're not causing the 13 stock price to go down when alleged corrective disclosures 14 are happening. 15 So during the focus period there's no price 16 movement in Apache's stock that is caused by the alleged 17 misrepresentations. That is the link that I am severing. 18 And as part of that analysis, you are also 0 Okav. 19 analyzing whether or not there is a link between the 20 misrepresentations and the corrective disclosures; right? 21 I wouldn't particularly say that, or I don't want Α 22 to use the term "link" that way. 23 That's how you use it in 4A, through, right? 0 24 Α Yeah, I think that's right. I think I used the

word "link," but I really mean the price movement.

1 I don't want to use the term "link" just to 2 say --3 I think in that sense that could be too general 4 and sounds just like is it related. 5 So I don't want to opine on whether one could say that the corrective disclosures bear some relationship 6 7 topically to the alleged misrepresentations. That's not -which I think the word "link" seems to -- is a little bit 8 like the word "related" that sometimes use that word, and it 9 10 can --11 So I think something could be related and be 12 topically similar, but not be corrective, for example. 13 When I'm using the term "link," I mean link to a 14 price movement. I don't mean just potentially topically related. 15 16 But part of your analysis in this case involved comparing the contents of the alleged misstatements to the 17 18 contents of the alleged corrective disclosures; right? 19 Α I think that's true. 20 And part of your analysis in this case involved Q 21 reaching a conclusion as to whether or not those corrective 22 disclosures corrected the alleged misstatements; right? I think in the process of analyzing price impact, 23 my findings indicate that the market didn't find anything 24 corrective in particular about, you know, the Seeking Alpha 25

1 and the October 25th alleged corrective disclosure. 2 Q So is your opinion that the corrective 3 disclosures were not corrective or that the market didn't find them to be corrective? 4 5 Α My opinion is that there's no price impact on the alleged misrepresentations during the focus period, that the 6 7 stock price is not going up during the focus period because 8 of the alleged misrepresentations and is not going down because of the alleged corrective disclosures. 9 Are you expressing any opinion in this case about 10 11 whether any of the corrective disclosures actually corrected 12 any of the alleged misrepresentations? 13 Α Yeah, and I think you asked me that question 14 before. So that's not particularly my assignment. But in 15 16 the process of doing my assignment, I have found that 17 there's no new information, for example, in the Seeking 18 Alpha story relative to -- I mean, there's no new 19 information, period, relative to Apache or Alpine High. And in fact in contrast to what Plaintiffs are 20 21 alleging, the Seeking Alpha story, which Plaintiffs allege 22 to be a corrective disclosure, does not reveal and is not 23 understood by the market to reveal anything new about Alpine 24 High.

So in that sense I think my findings are evidence

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1 that that alleged corrective disclosure is in fact not 2 correct. 3 0 As part of your analysis in this case, did you undertake any effort to compare the alleged 4 5 misrepresentations to the alleged corrective disclosures to see whether the corrective disclosure revealed anything that 6 7 had been concealed by the misrepresentations? 8 Α I didn't particularly do that, no, because that wasn't particularly my assignment. 9 10 What I did do, for example, that may be somewhat 11 similar to that is to see whether, after the alleged 12 corrective disclosures or during the focus period, whether 13 the analysts that are covering the company have understood 14 anything different relative to what Plaintiffs are alleging. For example, do the analysts understand -- come 15 16 to a new understanding during the alleged focus period about 17 how much, you know, valuable oil or wet gas there is 18 relative to how much dry gas at Alpine High. 19 Do analysts have to change their views about a 20 company in response to a corrective disclosure in order for 21 price impact to exist? 22 Α If analysts do not change their views about a

the analysts don't view that as impacting the value of the

company, and that is evidence that they don't view it as

company after a corrective disclosure, that is evidence that

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1 impacting the stock price. 2 So I think that's quite strong evidence disputing 3 price impact of an announcement if the announcement does not cause any analyst to change their view of the value of a 4 5 company. So analysts are professionals that their 6 7 professional job is analyzing the value of a company, and if 8 none of them have changed -- if a piece of information doesn't cause any of them to change their understanding, the 9 value of the company relative to that piece of information, 10 11 I think that's quite strong evidence that that piece of 12 information is not impacting the stock price or the value of 13 the company. 14 Do analysts have to link a company's corrective Q disclosure back to one of the alleged misrepresentations in 15 16 order for price impact to exist? 17 Analysts don't have to -- don't have to -- don't Α 18 have to do anything, but what the analysts --

The lack of analysts saying --

If analysts don't mention something, if they don't change their value -- their value relative to a piece of information, I think that is evidence that that piece of information is not affecting the value of the company.

Q I'm asking a different question.

Do analysts have to tie a company's corrective

1 disclosure back to one of the alleged misrepresentations in 2 order for you to find that price impact exists? 3 Α No, I wouldn't say that. If an analyst or a news article specifically did 4 Q 5 reference one of the company's prior misrepresentations in response to a corrective disclosure, is that evidence 6 7 relevant to the price impact analysis? 8 Α No, I wouldn't say that necessarily either. It's not in any way relevant? 9 Q 10 Α I mean, you would have to be --11 Potentially could be relevant, but not just on 12 its face it's not. 13 If the company issued a corrective disclosure, 14 and in response an analyst or a news article said, wait a second, they said this two years ago, is that evidence that 15 16 would be relevant to your price impact analysis? 17 Α You'd have to be specific. 18 It could be. 19 0 In order to --We talked about this a little earlier. 2.0 21 In order to assess whether any new information 22 relevant to the alleged misstatements was revealed on the alleged corrective disclosure dates, you need to understand 23 24 what the Plaintiffs are alleging; right? 25 Α Not necessarily.

1	I mean, for example, the last alleged corrective
2	disclosure, regardless of what Plaintiffs are alleging,
3	there's no new information about Apache or Alpine High
4	that's disclosed to the market, there's no analyst or no one
5	that mentions this alleged corrective disclosure. So
6	there's absolutely no evidence that anyone cares about it,
7	there's anything new about it and it has any impact on the
8	stock price.
9	So regardless of what Plaintiffs are alleging,
10	that corrective disclosure cannot be evidence of price
11	impact of anything that Plaintiffs are alleging because
12	there's just
13	Nobody cares about this article at all, and
14	there's no information in the article that is new
15	information about Alpine High or Apache.
16	Q In order to determine
17	A So regardless of what Plaintiffs are alleging,
18	that would not be evidence of price impact, so I think
19	So it's not necessarily true.
20	Q You don't need to have an understanding of what
21	information was allegedly misstated or concealed in order to
22	conduct a price impact analysis?
23	A I mean, generally I think you would need to
24	understand that.
25	I think the specifics of what plaintiffs are

Τ.	alleging for this particular alleged corrective discrosure
2	wouldn't
3	I think your prior question made it sound like,
4	you know, do you have to. I think you don't actually have
5	to because this would be an example where it wouldn't in
6	fact be necessary.
7	So, you know, my general view is, for most things
8	it's not always the case that something has to happen for
9	anything. Most things are not there's always exceptions.
LO	So I think there are exceptions where it may be
L1	possible to do a price impact analysis and not in fact fully
L2	understand Plaintiffs' allegations.
L3	Q Did you take steps in this case to fully
L4	understand Plaintiffs' allegations?
L5	A Yes, I did take steps, and I did try to
L6	understand Plaintiffs' allegations.
L7	Q Why?
L8	Why?
L9	A Because I am analyzing what Plaintiffs are
20	alleging, so I reviewed the alleged misrepresentations as we
21	went through and what Plaintiffs are alleging as the
22	corrective disclosures.
23	Q Let's look at paragraph 2 of your report.
24	In the second sentence you say, "In general,
25	Plaintiffs allege that Apache touted Alpine High as a

1 transformational discovery and concealed that the Alpine 2 High area was too gassy to ever be viable, i.e., too heavy 3 on unprofitable dry gas and too light on valuable oil and 4 wet gas." 5 Do you see that? Α 6 Yes. 7 That's consistent with your understanding of what 0 8 Plaintiffs are alleging was misstated and concealed in this case? 9 10 Yes. Α 11 Q Let's look at paragraph 15. Second sentence, "In general, Plaintiffs allege 12 13 that Apache touted Alpine High as a transformational 14 discovery and a world class resource play with immense 15 production capabilities and concealed that Alpine High area 16 was too gassy to ever be viable, i.e. too heavy on 17 unprofitable dry gas and too light on viable oil and wet 18 qas." 19 Right? 20 Α Yes. 21 Similar to what we just saw? Q 22 So your understanding is that the allegedly misstated and omitted information in this case is concerning 23 24 the production capabilities of Alpine High and the mix of 25 oil and wet gas versus dry gas; is that right?

1 Α Yes, in part. 2 Q What else? 3 Α Well, the alleged misrepresentations, as I say, are in --4 5 That's how they're summarized in the Complaint. I believe I'm quoting from the -- you know, one of the first 6 7 few paragraphs, which is in the summary of the Complaint. 8 The alleged misrepresentations are, you know, voluminous, as I said, which is why I have the Appendix to 9 10 my report. 11 Q Is there any other information that you 12 understand Plaintiffs to be alleging was misstated or 13 concealed in this case? 14 Α So, again, the alleged misrepresentations are very lengthy, but I think that does -- that is how 15 16 Plaintiffs have summarized their allegations, and that is 17 from, I believe, the very beginning of the Complaint. 18 And so you formed your understanding of what 0 19 Plaintiffs' claims were by reviewing the Complaint? 20 Α That's correct. 21 Did you gain that understanding through any other 0 22 means? I would say mostly from the Complaint. 23 Α 24 Let's look at paragraph 5. Q 25 You say, "I find that the lack of a link between

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the alleged misrepresentations and Apache's stock price during the focus period is further demonstrated by the fact that no new information was disclosed and the market did not change its view about Alpine High's oil and wet gas reserves or the mix during the focus period." Correct? Α Yes. Q So when you were looking for whether new information was disclosed or whether the market changed its views about the issues relevant to Plaintiffs' claims, you were looking for whether there was new information or changed views concerning Alpine High's oil and wet gas reserves or its mix; right? That's one of the things I was reviewing. Α I reviewed the new information being disclosed, including all of the alleged misrepresentations that were made during the focus period, as well as all of the alleged corrective disclosures during the focus period.

Q When you were looking at whether there was new information disclosed about the misrepresentations, were you looking for anything other than new information about Alpine High's oil and wet gas reserves or a mix?

A Yes, I was looking at --

Everything that Plaintiffs are alleging was disclosed about Alpine High relative to the alleged

concealed.

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	misrepresentation, so I reviewed everything that Plaintiff	Es
	alleged in the Complaint about misrepresentations coming i	in,
	as well as alleged corrective disclosures when the alleged	£
	misinformation is coming out.	
	Q Why were you	
	As you say in paragraph 5, why were you looking	3
	for whether new information was disclosed or whether the	
	market changed its views about Alpine High's oil and wet o	gas
	reserves or its mix?	
	A Because that's one of the things that the	
	Plaintiffs	
	I've quoted from the Complaint that Plaintiffs	
	are alleging that the company had concealed that the Alpir	ne
	High area was too gassy to ever be viable and too heavy or	1
	unprofitable dry gas and too light on valuable oil and wet	Ī.
	gas.	
	So that's a quote from the first few paragraphs	3
	of the Complaint. That's what the Complaint says.	
	Q Does the Complaint say anything else?	
	You say that's one of the things.	
	I just want to have an understanding of, you	
	know, what your understanding of the claims are.	
	A That is one of the specific claims that is made	3
	in the very beginning of the Complaint about what was	

2.

Q	And did you	consider any other claims in
determining	g whether or	not new information was disclosed or
the market	changed its	views about the subject matters
alleged in	leged in the Complaint?	

A Yes. I analyzed every single alleged misrepresentation that Plaintiffs alleged in the Complaint, which are -- which are many and which are summarized in an Appendix to my report because they're so lengthy.

So I analyzed each of them, as well as analyzing each of the alleged corrective disclosures that Plaintiffs allege.

So I analyzed all of the dates when Plaintiffs say new misinformation came into the market regarding the alleged, you know, fraud, and I analyzed each of the dates when Plaintiffs are alleging fraud was allegedly partially corrected, and I looked at how the market changed its view and whether there's any impact on the stock price. And for the impact on the stock price, I'm focusing on the focus period.

Q And when you say you looked at whether the market changed its view, you say in paragraph 5 and throughout the report that the market -- you looked at whether the market changed its view about Alpine High's oil and wet gas reserves, or the mix.

Did you look at whether the market changed its

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views about anything else?

A Yes. I looked at how the market changed its view about -- in general about Apache to understand how the stock price is moving, and I looked at how the market was changing its view at each of the alleged misrepresentations and at each of the alleged corrective disclosures.

So I looked to see how the market changed its view relative to the alleged misrepresentations during the entire focus period, analyzing each of the alleged misrepresentations, as well as each of the alleged corrective disclosures when Plaintiffs claim the truth of the allegedly -- of the alleged fraud was corrected.

- Q Let's talk about this focus period.
- You say in your report the focus period runs from February 23, 2018 to March 13 of 2020; is that right?
- 16 A That's right.
- Q And you understand that, as you've defined it,
  the focus period is different from the class period;
  correct?
- 20 A That's correct.
- Q Class period in this case begins on September 7, 22 2016; right?
- 23 A Yes, that's right.
- Q Maybe to make things easier for us today, if I refer to the time period from September 7, 2016 to

1 February 22 of 2018 as the pre-focus period, is that -- will 2 you understand what I'm referring to? 3 Α Yes. 4 So you say in paragraph 1 that counsel asked you Q 5 to focus your analysis on this time period; right? Α 6 Yes. 7 Did counsel ask you to limit your analysis to 0 this time period? 8 9 Α No. 10 What was the assignment you were given? 0 11 Α To analyze price impact from the alleged 12 misrepresentations -- whether the alleged misrepresentations 13 impacted the stock price during the focus period, so any of 14 the alleged misrepresentations that caused the stock price 15 to go up or caused the stock price to go down. 16 And so I focused on all of the alleged 17 misrepresentations and whether they impacted the stock price 18 during the focus period. 19 So that's what's described in the scope of 20 assignment, and that's what I was asked to do. 21 0 So when you were talking about price 22 impact here, the assignment you were given was to determine whether the alleged misrepresentations and omissions 23 24 throughout the entire class period, whether they impacted 25 Apache's common stock during this focus period?

1 Α That's right. 2 Q Did counsel ever ask you to offer price impact 3 opinions with respect to the entire class period? Α 4 No. 5 Did counsel ask you to assume anything with 0 respect to price impact for the pre-focus period? 6 7 Α No. You said earlier that you had done some analysis 8 Q of the pre-focus period that could be relevant to the price 9 10 impact opinions; correct? 11 Α I said, yeah, we may have. I mean, my 12 recollection is, we got the -- were contacted about this 13 matter about the Complaint. 14 I just don't recall what we might have done when we got the Complaint, but it wouldn't surprise me that we 15 16 might have looked at something or done something that could 17 have had some -- or had some relevance. That's all. 18 I just don't have a specific recollection of 19 that, but I wouldn't --20 Do you have a general recollection of conducting 0 any price impact analysis relevant or concerning the 21 22 pre-focus period? I don't have a recollection of that, and I'm 23 Α 24 not --25 I don't have a recollection of what we did. I'm

1 not -- asking more about what in fact that would mean, but I 2 wouldn't be surprised if we had done some sort of, you know, 3 some event study analysis, but I just -- I don't know. We might have looked at the stock price reactions 4 5 on -- on -- before the focus period, but I just -- I don't have a specific recollection of that. 6 7 But the price impact opinion you're offering in 8 this case is limited to whether the alleged 9 misrepresentations impacted Apache's stock price during the 10 focus period; right? 11 Α That's right. That's the assignment I've done. 12 I just, you know --13 I don't have a recollection of what might have 14 been done before we were given that specific assignment, but I wouldn't be surprised if there wasn't something that we 15 16 might have done -- that we would have done that could have 17 had some relevance to something. 18 You're not expressing an opinion in this case 0 19 that no price impact exists over the entire class period, 20 are you? 21 That's right. The analysis and my assignment and Α 22 my report is focused on the focus period. 23 And your opinions are focused on -- or limited to the focus period as well? 24 25 Α That's right.

1 And you're not expressing an opinion in this case 0 2 that no price impact exists during the pre-focus period, are 3 you? 4 Α That's right. 5 In paragraph 1 of your report, you say that you Q analyzed three corrective disclosure dates, right, April 23, 6 7 2019, October 25, 2019, and March 16, 2020; correct? 8 Α That's right, disclosure dates. And you understand that Plaintiffs have alleged 9 Q that there were two additional corrective disclosures during 10 11 the pre-focus period; right? 12 I think that's correct, ves. Α 13 And those dates were October 9, 2017 and 0 14 February 22 of 2018; right? 15 Α Yes. 16 0 And you don't analyze those two corrective 17 disclosures at all in your report, do you? 18 Α I do not. 19 And you're not offering an opinion about whether 20 those two corrective disclosures demonstrate price impact 21 for the pre-focus period misstatements; are you? 22 Α Correct. I am not. As part of your analysis in this case, did you 23 0 24 analyze whether there was front-end price impact for any of 25 the pre-focus period misstatements?

1 Α No. 2 0 So in --3 Strike that. So let's talk about September 7th of 2016. 4 5 You understand that that's the first day of the class period? 6 7 Α That's right. Yes. 8 Q And you understand that on that date Apache publicly announced the Alpine High play? 9 10 Α That's correct. 11 Q And you haven't analyzed whether Apache stock 12 price experienced a statistically significant price increase 13 on that date? 14 Α I did not, no. And you're not offering an opinion that any 15 0 16 statistically significant price increase on that date is not evidence of price impact, are you? 17 18 I'm not analyzing the price reaction on that Α 19 date. 20 All right. So specifically with respect to 0 21 September 7th, you haven't analyzed front-end price impact 22 for those misstatements; correct? 23 I'm not sure what you mean by that, but I have 24 not -- as a part of my assignment in this case, I have not 25 analyzed the price reaction to that announcement.

1	Q In your report you don't attempt to demonstrate
2	that 100 percent of any inflation that came into Apache's
3	stock price during the pre-focus period had fully dissipated
4	prior to the start of the focus period, have you?
5	A I don't even
6	I haven't even analyzed whether there is
7	inflation. That's not something I have
8	I have analyzed whether the alleged
9	misrepresentations and/or the alleged corrective
10	disclosures, whether there's any link between the stock
11	price movement during the focus period and the alleged
12	misrepresentations or the alleged corrective disclosures,
13	and I have found there's no link.
14	There's no price movement from the alleged
15	misrepresentations during the focus period, and there's no
16	price movement from alleged corrective disclosures during
17	the focus period.
18	The price is not moving during the focus period
19	because of the alleged misrepresentations. That's what I've
20	analyzed.
21	Q You're not analyzing
22	You haven't analyzed how the stock price moved
23	during the pre-focus period; correct?
24	A Not relative to the alleged misrepresentations, I
25	mean, so

	That's right.
2	Just to be clear, so one of the things that I do
3	in the event study is use a period before an alleged
4	corrective disclosure, for example, as a control period to
5	look at the relationship between Apache's stock price and
6	the industry and the market.
7	So in that sense I'm actually looking at how
8	Apache's stock price moves relative to the market and
9	industry index.
LO	So that actually can cover some period before the
L1	focus period, so in that sense sort of looking at how it
L2	moves.
L3	Q But you're not offering an opinion in this case
L4	on whether any of Apache's pre-focus period stock price
L5	movements are evidence of price impact?
L6	A That's right. That's correct.
L7	I'm looking at whether Apache's stock price moved
L8	during the focus period because of the alleged
L9	misrepresentations at all.
20	Q Okay. Let's take a look at paragraph 28 of your
21	report.
22	A Okay.
23	Q Here's where you discuss event studies and
24	introduce this concept of statistical significance.
25	A Yes.

1	Q One step in performing an event study is
2	calculating something that's known as a residual return or
3	an abnormal return; correct?
4	A Yes.
5	Q And that
6	What is a residual return?
7	A So it's the amount that, in this case, the stock
8	price moves beyond what would be expected given the movement
9	in the market and the industry.
10	Q How are residual returns calculated?
11	A Essentially the actual return the difference
12	between the actual return and the predicted return from a
13	model, a model in this case is based on the
14	So I've used both Dr. Nye's event study model, as
15	well as an alternative model, but both of them are measuring
16	the expected movements of Apache stock price given the
17	movement in industry and market index.
18	Q So the residual return is essentially what's left
19	over after you control for these market and industry
20	indices?
21	A That's right.
22	Q You just mentioned that you conducted this
23	alternative event study.
24	The conclusions that you express in this report
25	are not impacted by which event study you use: is that

1	correct?	
2	A That's correct.	
3	Q You claim	
4	In paragraph 33 you state that the alternative	
5	event study has a higher adjusted R-squared than Dr. Nye's	
6	on the majority of the dates tested; right?	
7	A That's right.	
8	Q And the dates tested, for purposes of your	
9	report, are the alleged misrepresentation and corrective	
LO	disclosure dates during the focus period; is that right?	
L1	A That's right.	
L2	So the higher R-squared though were	
L3	Both Dr. Nye and my event study are using	
L4	essentially a control period of a year before an event. So	
L5	we're testing a date using the year before.	
L6	So it's it's the year before	
L7	In testing one date, the model	
L8	The R-squared is coming from the 252 days or	
L9	whatever we're doing, the number of dates before.	
20	So it's actually the regression of over 200 a	
21	year's returns, basically.	
22	Q And if you look at Footnote 45, right, you say	
23	that the alternative event study has a higher adjusted	
24	R-squared for the majority of dates tested, which you say	
25	are the alleged misrepresentations and alleged corrective	

1 disclosures during the focus period; right? 2 Α Yes. 3 Have you analyzed which study has a higher 0 R-squared if you consider all of the dates tested throughout 4 5 the entire class period? I'm only testing the dates during the focus 6 7 So I don't know what you mean by "tested." period. 8 I'm testing --I'm testing dates during the focus period. 9 10 So getting back to this event study --Q 11 Α So, again, it's not on that --12 So it says that it's --13 It really should say like "for the majority of 14 dates tested." 15 But the test is --16 The test is an event study on a date, but it's 17 testing the year before that date. The actual price returns 18 that I'm using are all -- are a whole year of returns 19 before. So for each one of the tests that I've done 20 21 during the focus period, it's taking a full year of data and 22 testing whether, for that full year before that, which one has a better fit. 23 24 Have you analyzed which event study has a higher 0 25 R-squared if you considered every day of the focus period

1 instead of just the days tested? 2 Α I don't think so, but possibly. 3 0 So as you lay out in your report, once you calculate a residual return using this event study 4 5 methodology, you then analyze whether that residual return is statistically significant at a particular confidence 6 7 level; right? 8 Α Yeah, I'd say that's right. 9 Q And in this case you tested for 10 statistical significance at a 95 percent confidence level; 11 right? 12 Α Yeah, the 5 percent level. That's right. 13 0 Kind of interchangeable; right? 14 You can talk about 5 percent level and 95 percent confidence level? 15 16 They mean the same thing; right? 17 Α Yeah, that's right. 18 So if a --0 19 If a residual return is statistically significant 20 at a 95 percent confidence level, what that means is if the 21 absolute value of the residual return is within the top 22 5 percent of all residual returns observed during the 23 relevant period; is that right? 24 Α Not exactly. 25 So it means that only 5 percent of the time would you actually, you know, given the statistics, given the standard error of regression, would you expect to see a return of that magnitude.

You run the regression over a period, which here is a year or about a year, and then you get one statistic, which is a standard error of the regression. So if you use that standard error of regression, it may or may not be the case that it actually is, if you looked at the returns during that period, that it would actually be in the top 5 percent.

So it's not -- it's not -- it's not actually --

Q If you're looking -- if you're analyzing statistical significance at a 95 percent confidence level, only the top 5 percent of residual returns by absolute value are statistically significant; right?

A So you're calling something statistically significant if it would happen normally. You're going to make a mistake 5 percent of the time and call something unusual when it's really not unusual. It's something that happens 5 percent of the time.

So you'll call something statistically significant if it would only happen 5 percent of the time normally, and you'll say, okay, I'm going to make that mistake 5 percent of the time and call it significant when really it's not. That's what -- that's what you're doing.

1	Q I understand.
2	I'm asking numerically and as an order of
3	magnitude, 95 percent confidence level, that's what you're
4	applying. The statistically significant returns are the
5	ones that are in the top 5 percent by absolute value, right,
6	mathematically, not asking what conclusions you draw.
7	A You're calling something statistically
8	significant if you find that it is of a magnitude that, in
9	your control period, would expectation only happen 5 percent
LO	of the time.
L1	Q Does statistical significance measure anything
L2	other than the magnitude of the residual return?
L3	A I'm not
L4	I don't understand that question.
L5	Q You said it was
L6	You said if you find that it is of a magnitude
L7	that in your control period would expect to only happen
L8	5 percent of the time.
L9	Are there any other factors other than magnitude
20	that are considered in determining whether or not a residual
21	return is statistically significant?
22	A Well, there are sort of lots of things that go
23	into it, right. I mean, you have to
24	First of all, statistical significance in general
25	can be applied to lots of different situations.

1 You're talking about an event study, and a 2 particular way that we're doing the event study here is 3 using a control period that's essentially a year before a 4 time period. 5 So there's lots of things that go into this, right, as what -- you know, what is the control period 6 7 you're using, what are the -- you know, are you using a 8 market index or industry index, what's going into the industry index? 9 10 There are lots of steps of this. 11 Q Let me ask it this way: If you're testing for 12 statistical significance at a 95 percent confidence level 13 and a residual return is not within the top 5 percent of all 14 residual returns, absolute value, is that return statistically significant? 15 16 So you're not finding all the returns and ranking 17 them and seeing what it is. 18 You actually create a model, and then you take 19 the standard error of that model, and then you apply that. 20 But what you're essentially saying is that this 21 return of this magnitude would normally happen if there 22 wasn't an event. This would normally happen 5 percent of the time. 23 24 So you are determining that you will call 25 something significant when it's not and make a mistake

1 5 percent of the time. That's what the 5 percent means. 2 But you're not actually taking all the returns over some 3 time period and ranking them and saying, is this just 4 above --5 You're not --That's just not actually how you do it. 6 7 statistical --You're taking the standard error, you're creating 8 a model, and you can run your model over a different time 9 10 period, and you can get a different standard error, for 11 example, and then you'll end up with a different -potentially different value and a different conclusion about 12 13 whether something is above or below a 5 percent threshold. 14 Are you familiar with something called a null Q 15 hypothesis? 16 Α I am familiar with a null hypothesis. 17 In the course of testing for price impact, what 0 18 would be the null hypothesis? 19 Α That isn't --20 You wouldn't have a null hypothesis for price 21 That's just not a -impact. 22 Isn't the concept of statistical significance 0 used to determine whether you can reject a null hypothesis 23 24 and accept an alternative hypothesis? 25 So statistical significance you can have a null Α

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1 hypothesis, and something is -- you're going to -- you can 2 reject the null and say you'll reject the null if you are, 3 you know, whatever, at a 5 percent level. So 5 percent or 1 percent level are typical levels that you might use to 4 5 call statistically significant. And you would say, given the null hypothesis, this would only happen 5 percent of the 6 7 time or 1 percent of the time. So this seems unlikely, so I 8 will reject the null and say this is unusual because this is something that would only happen less than 5 percent of the 9 time or less than 1 percent of the time. 10 11 Q And is that the process that you use when 12 conducting an event study and testing for statistical 13 significance under an event study? 14 Α My prior answer is sort of a general description 15 of how -- what 5 percent and 1 percent statistical 16 significance. 17 Yeah, I think that's correct. 18 So in testing for price reactions using an event 0 19 study, do you develop a null hypothesis and an alternative 20 hypothesis? 21 Α T don't. --22 The statistical --23 What I'm doing and what Dr. Nye is doing and what 24 is standard to do in an event study is to, in testing

statistical significance, is to see whether the results are

	something that, given the control period, for example, you
2	would expect to happen something of that magnitude you
3	would expect to happen 5 percent of the time or 1 percent of
4	the time.
5	Those are fairly standard statistical
6	significance levels.
7	Q But in applying those statistical significance
8	levels, what you are doing is trying to determine whether
9	you can reject the null hypothesis of no impact and conclude
LO	that there is evidence of impact; correct?
L1	A No. You're really just seeing whether the
L2	movement is unusual, given your control period.
L3	Q And if the movement is unusual, what conclusions
L4	do you draw from that?
L5	A Well, if the movement is not unusual and it can't
L6	be differentiated from zero, then you can that tells you
L7	something. And if the movement is unusual, then I think
L8	that can tell you something else.
L9	So you are seeing whether the movement is
20	statistically significant and whether it is different than
21	what you would expect, given the control period.
22	Q And is your testimony that that analysis has
23	nothing to do with analyzing whether you can reject a null
24	hypothesis and accept an alternative hypothesis?
25	A Well, you don't accept an alternative hypothesis,

1 I mean, so it doesn't --2 So I have a whole long discussion in my report 3 about what it does not mean. So, for example, you know, I've tried to explain 4 5 what the -- what the results of the statistical significant or the p-values of an event study mean and what they do not 6 7 mean in a paragraph that describe some common mistakes about statistics, I mean, understanding of that, and some of that 8 is --9 10 My question was much simpler. Q 11 Is it your testimony that this analysis of 12 analyzing statistical significance is not a form of 13 hypothesis testing where you're testing a null hypothesis 14 and an alternative hypothesis? I don't know if I have a good answer to that, 15 Α 16 reallv. 17 In the context of hypothesis testing, if a result 18 is not statistically significant, does that mean that the 19 null hypothesis is true? 20 So in statistics nothing ever means that Α 21 something is definitely one thing or another. 22 So the answer is pretty much always, no, nothing ever means anything definite. Statistics is not about --23 24 Things are almost always not definite in It's only probabilistic. So it is -- it is --25 statistics.

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Statistical significance can be evidence in support of something, and the lack of statistical significance can be evidence in support of something else, but statistics rarely if ever tells you anything definitive. And you're expressing an opinion in this case Q that the lack of statistical significance is evidence of no price impact; right? Α That's one of the things. I am saying that there is alleged corrective information about the misrepresentations, and when that corrective information is coming into the market, the market is not moving. The movement in the market is not anywhere near a level that any academic or researcher or even the Courts would consider statistically significant. So they cannot be differentiated from zero. And I am saying that that is evidence of no price impact. It's evidence of not moving the stock price. The stock price movement is not differentiable from what it normally does. If you turn to paragraph 31, if we're looking on page 17. Α Yes. About seven lines down, there's a sentence that 0 says, "Thus, in this context, if Dr. Nye's event study yields no statistically significant price reaction, it would

provide evidence of no price impact."

1 Do you see that? 2 Α Yes. 3 0 That's the opinion you're offering in this case; right? 4 5 Α I'm sorry? That's an opinion you're offering in this case? 6 Q 7 Yes, that's part of my findings in this case, Α consistent with the judicial reference manual on scientific 8 evidence, which says that when studies have a good chance of 9 detecting a meaningful association, failure to obtain 10 11 significance can be persuasive evidence that there's nothing much to be found. 12 13 And I'm using the very -- the exact test that 14 Dr. Nye has used to show that there's a meaningful 15 association between the stock price and the stock price 16 movements. 17 So he has a test which he uses to test whether 18 the stock price does in fact react to information, and that 19 very test shows that there is not a reaction to the alleged 20 misrepresentation and the alleged correction of the alleged 21 misrepresentation, and that is strong evidence of lack of 22 price impact. 23 Why don't we look at the Reference 24 Manual. We'll mark this as Allen Exhibit 2. Ken, this 25 is Tab 5.

1 (Exhibit 2 was marked for identification.) 2 MS. HEFLEY: Can you drop that in the Chat? 3 THE WITNESS: Are you putting these into the 4 exhibits folder or --5 MR. RUSSO: Ken should be doing that now. 6 THE WITNESS: Oh, okay, great. 7 VIDEOGRAPHER: Yes. Just hit refresh in your 8 browser if they're not appearing. 9 THE WITNESS: Yes, I got it. Thank you. 10 BY MR. RUSSO: 11 Q Ms. Allen, do you recognize this Allen Exhibit 2 12 as a copy of the Reference Manual on Scientific Evidence? 13 Yes. Α 14 Turn to page 254, which is the portion you cite Q 15 in your report. 16 Α Okay. 17 Do you see, if you look at the second full 0 paragraph here, it starts, "When a study." 18 19 You cited the last sentence in this paragraph; 20 right? 21 Yeah, hold on. I'm trying to do it myself Α 22 because I find it too small. 254, is that what you said? 23 24 0 Yeah, second full paragraph, last sentence right 25 above heading number 2.

1 Α I'm still getting to 254. Hold on. 2 Okay. Yes. 3 Q You cited the last sentence; right? 4 Α Yes. 5 If you look back on the bottom of page 253, it Q says, "When a P-value is high, findings are not significant, 6 7 and the null hypothesis is not rejected." 8 Do you see that? 9 Α I don't see that. I'm sorry. 10 Where am I, 253? 11 Q Bottom of page 253. 12 Α Yes. 13 See that? 0 14 Α Yes. This is under a heading titled "Evaluating 15 0 16 Hypothesis Tests, " right? 17 Α Yes. 18 So the section of the Reference Manual that 0 19 you're relying on is a section that refers to hypothesis testing; right? 20 21 I think in a subsection, that's right. Α 22 The heading in this subsection is called 0 "Evaluating Hypothesis Tests"? 23 24 Α Yeah. 25 So it says -- goes on to say, "When findings are Q

1 not significant, this could happen for at least two reasons: 2 1), the null hypothesis is true. 2), the null hypothesis is 3 false, but by chance the data happened to be of the kind expected under the null." 4 5 Do you see that? Α I do. 6 7 Do you agree with that? 0 8 Α Yeah, I think that's true. It goes on to say, "If the power of a statistical 9 Q 10 study is low, the second explanation may be plausible." 11 Correct? 12 Α Yes. 13 And power is the probability of rejecting the 0 14 null hypothesis when the alternative hypothesis is true; right? 15 16 Α It says, "Power is the chance that a statistical 17 test will declare an effect when there" --18 You're looking at Footnote 106. 0 19 Α -- "when there is an effect to be declared." 20 Footnote 106 says, more precisely, "Power is the Q 21 probability of rejecting the null hypothesis when the 22 alternative hypothesis is right"? Yeah, it does. 23 Α 24 0 So the portion you read, in the context of price 25 impact, power is the chance that the statistical test will

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    find a price impact when there is price impact to be found;
 2
    correct?
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         Α
                Oh, I don't know that that's true, no.
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                First of all, price impact, it's not --
 5
                Price impact --
                The test is not price impact.
 6
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                The test is whether the price reaction is
    statistically significant, right, whether the reaction is
 8
    different than other days, right, can be differentiated from
 9
10
    zero so...
11
          0
                Power is the chance that this test will find
12
    statistical significance when there is an effect to be
13
    found; right?
14
         Α
                Yeah, I think that's right.
15
                MS. HEFLEY: Rick, when we get to another break
16
             a good stopping point, can we take a break?
17
                MR. RUSSO: I think another five minutes would be
18
          a good spot, if that's all right with you guys.
19
    BY MR. RUSSO:
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                So this says that if the power of a statistical
          0
21
    test is low, it may be plausible that a statistically
22
    significant result means that the null hypothesis is
    actually false, but by chance the data is what you'd expect
23
    to see under the null; right?
24
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                That's what this says?
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1	A Say that again.
2	Q If the power of a statistical study is low, like
3	this says that the section the second explanation may be
4	plausible, which means if the power of the statistical study
5	is low, the null hypothesis may actually be true, but by
6	chance you've obtained data that you would expect to see
7	under the null hypothesis; right?
8	Strike that.
9	Let me ask you this way.
10	A I don't think that's right what you said. Sorry.
11	I think what they're saying is, the power is low,
12	so it could be that the null is actually not true, but the
13	power of your test is low, so you just can't see that.
14	Q You said it way better than I did. Thank you.
15	The second paragraph, which is the beginning of
16	the one that you cite, says, "When a study with low power
17	fails to show a significant effect, the results may
18	therefore be more fairly described as inconclusive than
19	negative."
20	Do you see that?
21	A Yes.
22	Q "The proof is weak, but the power is low?"
23	A Yes.
24	Q See that?
25	A Yes.

1 Then it says, "On the other hand, when studies 0 2 have a good chance of detecting a meaningful association, 3 failure to obtain significance can be persuasive evidence that there is nothing much to be found." 4 5 Do you see that? Α 6 Yes. 7 So the Reference Manual is saying that the 8 conclusion you draw from the absence of statistical 9 significance depends on the power of this statistical study; 10 right? 11 А Yes. It's saying that if you don't actually have 12 a good way of testing what you're doing and you don't have a 13 good method, then you may not be able to draw conclusions 14 from it. 15 I'm using the very method that your expert has 16 used to analyze whether the stock price reacts to 17 information. So I am using the exact method that your 18 expert has said is a method to analyze whether the stock 19 price is reacting to information. 20 So either it is a method that has a meaningful 21 probability of --22 Either it's a good method and it makes sense to 23 do this, or it's not. 24 Well, if a study has low power, it doesn't mean 0 that it will find an effect where no effect exists; right? 25

1 Power looks at whether a study will find --2 Strike that. 3 If a study has low power, it means that the study will not find an effect where an effect exists; right? 4 5 Α So if you have a method that isn't very Right. good and it's not very good at detecting things, it's not a 6 7 good method, then you may not -- you know, the results might 8 not tell you anything. This is the very method that your expert put 9 forward to try to see whether the stock price -- Apache's 10 11 stock price reacts to information. So I'm using the very 12 method your expert has used to see whether it reacts to 13 information, and for the exact same purpose, right. 14 So your expert is saying that in order to use the 15 fraud on the market and the reliance rather than saying that 16 individuals are relying on the alleged misrepresentations 17 themselves, that information would be incorporated into the 18 stock price. 19 So he is testing whether that is the case by using this very methodology, and if that methodology doesn't 20 21 test -- doesn't have any meaningful way of testing whether 22 information is incorporated into the stock price --23 I'm using the very same test to test the very 24 same type of thing that --25 I am directly testing whether the alleged

Deposition of Lucy P. Allen

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misrepresentations are impacting the stock price using the exact same methodology that he's using.

He is indirectly saying, I think they would affect the stock price and Plaintiffs can use the market efficiency because he's finding that earnings announcements move the stock price, so therefore it's likely that the alleged misrepresentations would also impact the stock price.

I am now testing the very alleged misrepresentations themselves and whether they are moving the stock price using his exact methodology and finding that they are not moving the stock price.

So that is direct evidence against price impact using the very method that Plaintiffs have used to try to show that the alleged misrepresentations would be incorporated into the stock price and that they don't have to show individual reliance, but are using this sort of market efficiency shortcut.

0 But you are not using it for the same purpose; right?

You are not using it to demonstrate the existence of an effect. You are using it as evidence of the absence of an effect.

And this Reference Manual says whether you can draw that conclusion depends on the power; right?

The power --

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Power doesn't assess the chances of obtaining a false positive; right? It's the chances of obtaining a false negative.

If this method is good for determining whether --So Plaintiffs are claiming that rather than claiming that the individual that Plaintiffs relied on the individual misrepresentations themselves, they're claiming that we can tell that it would be incorporated into the stock price because your expert is using the methodology to try to show that this type of information gets incorporated into the stock price. But rather than using the exact type of information that Plaintiffs are alleging and using the misrepresentations themselves, he's analyzing more earnings announcements.

I am using his exact methodology and showing the opposite, which is that the stock price is not reacting to the alleged misrepresentations.

Therefore, I'm using Plaintiffs' exact methodology to show the absence of price impact, that there is not price impact, and this is Plaintiffs' and their expert's methodology to do the very same thing, which is to see whether the price reacts to information, and I am showing that it is not reacting to the alleged misrepresentations, and therefore I'm finding no price

1 impact for the alleged misrepresentations during the focus 2 period using Plaintiffs' exact methodology and for something 3 that is more directly on point, which is the misrepresentations themselves rather than just the more 4 5 indirect point which Plaintiffs are making, which is, we'll analyze other information other than the misrepresentations 6 7 themselves and show that those impact the stock price when 8 made, so therefore Plaintiffs are concluding it would therefore be likely that the misrepresentations would also 9 impact the stock price, and we don't have to show individual 10 11 reliance, we can just claim that because of the fraud on the 12 market, it would be incorporated into the stock price. 13 But where in your report do you analyze the power 14 of Dr. Nye's event study and your alternative event study? 15 Α I do not analyze the power. 16 I'm using the exact methodology that Dr. Nye has 17 used, that Plaintiffs have used, and I'm applying it to the 18 more relevant point, which is the misrepresentations 19 themselves. But you're using it for the opposite effect, 20 21 which you just said, the opposite purpose, which is to 22 demonstrate the absence of price impact. 23 I'm not using it for the opposite effect.

comes to the conclusion. His very methodology shows that

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there is no effect.

1 So I'm using his exact test on whether 2 information impacts the stock price. 3 He's saying information impacts the stock price, 4 and I'm saying, using your exact test, which the 5 misrepresentations themselves, are not impacting the stock price. 6 7 So he has a test. He's developed a test, and the 8 point of his test is to see whether information impacts Apache stock price, and the very results of that test show 9 10 that the misrepresentations do not impact the stock price. 11 Q The point of the test is to test for an effect, not the absence of an effect; correct? 12 13 No, that is not the --Α 14 The point of the test is to see whether there is 15 an effect. You can't just say that the point of the test is 16 to only get one side of the result. 17 The point of a test is, does it have an effect, or does it not have an effect? 18 19 You can't say only one answer is relevant so I'm 20 going to ignore the other answer. A test is not -- is relevant. If the test is 21 22 relevant, then the answer is relevant whether it's a yes or 23 a no. 24 MS. HEFLEY: Hey, Rick, I'm sorry to interrupt, 25 but we need to take a break. We've going almost two

1 hours, I think. About 10 minutes? Thanks. 2 VIDEOGRAPHER: Off the record 12:32 p.m. 3 (Recess was taken.) 4 VIDEOGRAPHER: Back on the record 12:46 p.m. 5 BY MR. RUSSO: Ms. Allen, can you turn to page 19 of your 6 0 7 report? 8 Heading 7 says, "A detailed analysis of the focus period shows no price impact and no link with any of the 9 alleged misrepresentations made during the alleged class 10 11 period." 12 Do you see that? 13 Α Yeah, that's the heading. 14 So you used the phrases "no price impact" Q and "no link." 15 16 What's the distinction between those two? 17 Α I think essentially the same thing here, meaning 18 the price is not moving because of it. 19 Okav. So there's no reason why you broke those 20 two concepts out separately? 21 Α I don't know that I've broken them out 22 separately. I listed them. 23 Look at subheading A. Subheading A is where 0 24 vou --25 In this section you analyze the focus period

1 misrepresentations; correct? 2 Α Yes. 3 0 Is it fair to characterize this as more of a 4 front-end price impact analysis? 5 Α Yeah, I think you could do that. And here you use the term in the heading "price 6 0 impact;" right? 7 8 Α That's right. If you turn to subheading B on page 24, in 9 Q 10 this section that's where you analyze the corrective 11 disclosures; right? 12 Α Yeah. 13 Here you say both price impact and no link; 0 14 right? 15 So is there any reason for why you're using only 16 price impact in the context of a front-end analysis and both 17 price impact and link in the context of a back-end analysis? 18 I just think that the link is that the Α 19 misrepresentations occur at another point in time. 20 So it's just to --21 Not only is it just --22 Q Okay. I think that's the only --23 Α 24 If we look back in heading A, as you say here, 0 25 your analysis in subheading A concerns whether there was any

1 price impact in reaction to the misrepresentations made 2 during the focus period; right? 3 Section A is about the misrepresentations made 4 during the focus period. 5 0 And here you look at --Okav. Let me ask, why did you limit your review of 6 7 front-end price impact to the statements made during the focus period? 8 I didn't limit my analysis of price impact to 9 Α 10 only the misrepresentations during the focus period, but the 11 question was whether there is any price impact from any of 12 the misrepresentations during the focus period. 13 Plaintiffs could be alleging that the alleged 14 misrepresentations during the focus period caused the inflation to increase during the focus period, and that's 15 16 what in part this section then would analyze. 17 Why didn't you also analyze front-end price 0 impact from the misstatements made prior to the focus 18 19 period? 20 Α So the question is whether there's price impact during the focus period. That was my assignment. 21 22 So what happened before the focus period and how the price moved relative to misrepresentations isn't 23 24 something that I was asked to do. 25 But there are misrepresentations made during the

1 focus period -- alleged misrepresentations. I don't want to 2 say whether they're misrepresentations or not. 3 There are alleged misrepresentations made during 4 the focus period, so I'm analyzing whether those 5 misrepresentations impacted the stock price when made in this section 7A. 6 7 Let's look at paragraph 43. 0 8 It starts, "No Plaintiffs claim that Apache made 9 misstatements on February 23, 2017, August 3, 2017, and 10 February 22, 2018 about Alpine High being economic at low 11 commodity prices." 12 Do you see that? 13 Α Yes. 14 Those three misrepresentation dates are not Q within the focus period; right? 15 16 Α That's right. 17 Why were you analyzing price impact for those 0 three dates in particular? 18 19 Α These are just a time period when --20 During the focus period, the commodity prices 21 They go down. change. 22 I'm not quite sure why this particular paragraph is necessarily under section A. So I think at some point we 23 24 had some discussion about where -- where in fact to put So organizationally I'm not quite sure why it's under 25

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this section.

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But the point of including this in my report was to note that during this time period the commodity prices were declining, and one of the issues that Plaintiffs are alleging is that some of the prior misstatements were about how Alpine High -- being economic at these low prices.

So this was an issue I wanted to address. think whether it should have actually fallen under section 7A or been somewhere else I think is an organizational question.

- So you acknowledge here in paragraph 43 that part of the -- part of what was misrepresented during the class period according to Plaintiffs is Alpine High being economical at low commodity prices; right?
- Α That's right.
- So you would agree then that in addition to defendants touting the reserves and the mix at Alpine High, Plaintiffs allege that they also misrepresented that it would be highly economic to extract and sell these resources even if gas prices fell substantially?
  - T think that --Α
- That's correct, and that is one of the allegations I have -- I do mention in my report, and I analyze.
- You analyze that in paragraph 43; right? Q

1	A I analyze it throughout my report.
2	I discuss it in paragraph 43.
3	So there are other sections within my report that
4	also do that, section 44, so section 8C, for example. Well,
5	maybe that's not a good example but, yeah.
6	So specifically addressing it in paragraph 43,
7	but other parts of my report also respond to that.
8	Q Where else in the body of your report do you
9	reference Defendants' misrepresentations about Alpine High
10	being economic at low commodity prices?
11	We looked at the summary of the claims this
12	morning, right, and we said that those talk about the
13	reserves and the mix.
14	Do any of those paragraphs reference
15	misrepresentations about Alpine High being economic at low
16	commodity prices?
17	A In my
18	I don't know.
19	In the summary of my allegations, my section.
20	Q Did paragraph 2 reference alleged misstatements
21	concerning the economics of Alpine High at low commodity
22	prices?
23	A Paragraph 2 of my report?
24	Q Yes.
25	A I think by "unprofitable," that is mentioning the

1	economics.
2	Is that what you said?
3	Q Economics at low commodity prices. You've
4	referenced it in paragraph 43.
5	A I don't think paragraph 2 says "economics at low
6	commodity prices."
7	Q You go on to say here in paragraph 43 that
8	"Following these alleged these three alleged
9	misstatements, analysts didn't mention the misstatements and
10	didn't incorporate the misstatements into their valuation of
11	Apache."
12	Right?
13	A I do say that as part of a sentence, that's
14	correct.
15	Q That there was no statistically significant stock
16	price increase; right?
17	A No analyst mentioned these alleged misstatements
18	are incorporated alleged misstatements into their
19	valuation.
20	Yeah, that's right.
21	Q So you're conducting here a front-end price
22	impact analysis for these three misstatements; correct?
23	A I don't know if I would say that. That's not
24	what I'm trying to do.
25	I'm analyzing whether these alleged misstatements

impacted the stock price during the focus period, and during
the focus period is a time period when commodity prices
decline substantially. So I thought it important to address
the issue of these.

I have addressed them in part through many other parts of my report, including looking at each of the alleged corrective disclosures, but since the focus period is a period when commodity prices are declining substantially in one of -- part of Plaintiffs' allegation is alleged misstatements regarding how economic Alpine High would be if prices decline, I have additional analysis and discussion of it here, including that when the statements were made themselves they weren't repeated by analysts, and in fact analysts said the contrary, which is they would expect, if the commodity prices decline substantially, that it would economically hurt Apache.

- Q You cite four analyst reports here; correct?
- 18 A When you say here --

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- Q Looking at paragraph 43?
  - A Well, I cite all the analysts because I say no analyst mentioned these alleged misrepresentations.
  - So that's a review of every analyst that's following the company at that time. So that's, in essence, citing all of the analysts.
  - I might have some quotes from some specific

1 I don't know how many specific analysts I analysts. 2 actually quote. 3 There are four bullets here; right? 4 Α There are four bullets. 5 Three Bank of America reports and one 0 CreditSuisse report; right? 6 I think the first three are different --7 different Bank of America reports, yeah, and then I cite a 8 CreditSuisse report. 9 10 Right, three Bank of America and one 11 CreditSuisse? 12 Yeah, I think that's correct. Α 13 You cite these in support of the sentence that 0 14 "During the focus period, analysts consistently repeated 15 that deteriorating commodity prices would drive expectations 16 about Alpine High downward, " right? 17 That's right. Α Were these the only analyst reports that were 18 0 19 issued on February 23, 2017, August 2, 2017 and February 22, 2018? 20 21 On February 23, 2017, there are a bunch of Α 22 reports issued on February 23, 2017 I think is the --23 Sorry. What page are we on now of my report? 24 I just lost it. 25 MS. HEFLEY: It's 23 to 24.

1 THE WITNESS: 23, thank you. 2 Α February 23, 2017 is the date of the --3 Yeah, so there are a number of --4 The first alleged misstatement that I'm referring 5 to here is February 23, 2017. BY MR. RUSSO: 6 7 There are 15 reports on that date; right? 0 8 Α On that date there are a bunch of reports, yeah, and I believe none of them mention the alleged 9 10 misrepresentations or incorporate it into their valuation of 11 Apache. So when I said the "none," that would be 12 13 including all whatever you said, 17. 14 You're citing this one for the point that 0 15 analysts consistently repeated that deteriorating commodity 16 prices would drive expectations; right? 17 You cite 1 of the 15 reports issued on that day? 18 I'm citing that --Α 19 I'm saying --20 None of them mention the alleged 21 misrepresentations. 22 I'm saying, to the contrary, they're saying that weak commodity prices would challenge the economics, and 23 24 then I am citing one of them, a Bank of America report on 25 that date.

1	Q Are you offering an opinion in this case that the
2	market was not misled by these misstatements?
3	A I'm not
4	I've not been asked to analyze whether the
5	statements were false and misleading.
6	Q Are you expressing an expert opinion in this case
7	that these three the misrepresentations made on these
8	three days were not actually false and misleading?
9	A I haven't been asked to analyze that.
10	This might speak to that, but that's not a
11	question I was asked to analyze.
12	I mean, the fact that none of them
13	None of the analysts mentioned the statements at
14	all, and there's no indication that they incorporate the
15	statements into their valuations of the company, and some of
16	them are flat out saying the opposite, which is that they
17	would expect it to deteriorating pricing would
18	economically challenge the economics of Alpine High.
19	I think
20	I have not been asked to analyze that question,
21	but I would say that the findings that I have here could
22	certainly be used as evidence that
23	I forget exactly how you worded the question.
24	Q You assumed that for purposes of your analysis
25	that Plaintiffs' misstatements and omissions alleged

1 misstatements and omissions were actually false and 2 misleading. 3 Does that assumption apply to these 4 misstatements? 5 Α I would say I assume they're false and misleading. 6 7 Whether they actually misled the market isn't 8 something I was particularly asked to analyze, but I would say that this would be strong evidence that, to the extent 9 they were false and misleading, the market was not misled by 10 11 them. 12 Is that an opinion you're expressing in this 0 13 report? 14 Α I do not explicitly give that opinion in this report, but now that you have brought it up and asked me the 15 16 question, I do think that this paragraph and the findings 17 are quite strong support that those statements did not 18 mislead the market. 19 Was this the only --Were these the only three dates during the class 20 21 period where Alpine -- Apache made representations about the 22 economics of Alpine High? These are the specific ones where the Plaintiffs 23 24 allege that they made statements about being economic at low 25 commodity prices.

1 These are the ones that were highlighted to that 2 effect in the Complaint. 3 Are they the only ones that are alleged in the Complaint? 4 For that specific point, I believe that's 5 Α 6 correct. 7 I'm citing something that is way near the end of 8 the Complaint rather than in the summary of the Complaint. 9 MR. RUSSO: Let's mark as Allen Exhibit 3 a copy 10 of the Complaint. 11 Ken, it's Tab 2. (Exhibit 3 was marked for identification.) 12 13 BY MR. RUSSO: 14 Ms. Allen, do you have Tab 2? Q 15 Α I do. I have a hard copy of the Complaint to 16 make it easier. 17 0 If you'd turn to it paragraph 192 of the 18 Complaint. 19 Actually, strike that. 20 Look at paragraph 194. You'll see this is under 21 the heading of statements that were made on September 7, 22 2016? 23 Α Yes. 24 0 194 lists out statements made during the Barclays 25 Conference on September 7th, and there's a quote from

list out the misrepresentations made during the class

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1 period. 2 Α Okay. 3 0 Do those statements that I just read appear in 4 entry 1 of Appendix C? 5 Α I don't think so, no. Are any statements attributed to paragraph 194 in 6 0 7 the Complaint that address --Strike that. 8 9 Entry 1 --10 Α Paragraph 194 in here --11 Q Yes. 12 You included the allegations about the volume of 13 oil and gas, but you didn't include the misstatements about 14 the economics about Alpine High; right? 15 Α No. That's right. 16 How did you decide which misrepresentations to 17 include in Appendix C and which misrepresentations to omit? 18 Α I think my recollection is, we tried to focus on 19 the ones that Plaintiff highlighted, like they're 20 underlined, but I'm not sure. 21 Let's look at paragraph 193 of the Complaint. Q 22 Α And I think the ones that were highlighted in 23 the -- you know, in the beginning in the introduction. 24 as it is, it's 12 pages. It's just to --25 You wanted me to turn to where? I'm sorry.

1 0 Paragraph 193. 2 Α 193, okay. 3 0 Do you see there's a statement there that the 4 last statement alleged in paragraph 193 concerns the "low 5 cost highly economic locations in the wet gas play"? Yeah. 6 Α Yes. 7 0 Is that statement in your --8 Α No, I don't see --I see 191 and 194. 9 And you've conducted no analysis in this case as 10 0 11 to whether the September 7, 2016 misstatements impacted 12 Apache stock price following their disclosure on 13 September 7, 2016, have you? 14 Α I've analyzed whether they impacted the stock 15 price during the focus period. 16 Did you analyze whether Apache's stock price experienced a statistically significant increase in response 17 18 to the September 7, 2016 alleged misrepresentations? 19 Α That was not part of my analysis, no. 20 Your analysis and your opinions in this case 0 21 concern whether these September 7, 2016 misstatements were 22 impacting Apache's stock price two years later; right? During the alleged focus period, that's correct. 23 Α 24 Go to page 4 of your report. 0 25 As we talked about, section B, this is where you

analyzed the corrective disclosures that were made during 1 2 the focus period; right? 3 Α That's right. 4 Q If we look at --5 The disclosures that you're analyzing here are the April 23, 2019, the October 25, 2019 and the March 16, 6 7 2020 disclosures; right? 8 Α April 23, 2019. 9 The other dates again? October 25 and March 16. 10 Q 11 Α That's correct. 12 We looked at heading 1 here, which refers to 0 13 April 23, 2019 disclosures. 14 You say that it did not result in a statistically significant price decline, was expected by the market, given 15 16 the extremely low gas prices, it did not change the market's 17 expectations about Alpine High's reserves or the mix of oil 18 and wet gas versus dry gas; right? 19 Α Right. 20 Those are the three bases that you provide for 0 21 why you're not finding price impact for the April 23 22 corrective disclosure; right? 23 Α Well, this is a summary heading. 24 0 Look at paragraph 48. You lay out the three 25 bases; right?

1 "Including for the following reasons, which are Α 2 detailed below." 3 So that's a summary of three -- three of the 4 reasons that I have. 5 So these are the three that you lay out in your 0 report; correct? 6 7 No, it's not only these three that I lay out in 8 my report. 9 My report has a number of sections and points, 10 but these are three points that I have a more detailed 11 analysis of in this section. 12 0 So you have other reasons for why the 13 April 23 corrective disclosure is not evidence of price 14 impact that you haven't disclosed in your report? 15 Α That's not what I said. 16 My report discloses the summary of all of my 17 Other sections of my report would be responsive 18 to additional reasons why I am finding that there's no price 19 impact from the alleged misrepresentations during the focus 20 period, including that there's no price impact from this 21 alleged corrective disclosure. 22 So I have, you know, a whole section of my 23 report, for example, that shows that the price movement of 24 the index is consistent with what's happening here, and the 25 price movements are --

1	I have other sections of my report that would be
2	relevant.
3	Q Let's talk about the bases that you've disclosed
4	in paragraph 48.
5	The first one is no statistically significant
6	decline; right?
7	A There was no statistically significant decline in
8	Apache's stock price following this alleged corrective
9	disclosure according to both an alternative event study as
LO	well as according to Plaintiffs' expert's event study.
L1	Q Talking about statistical significance first, you
L2	note in paragraph 50 that Plaintiffs claim that the movement
L3	of Apache stock price from April 24th to April 26th
L4	Strike that.
L5	You acknowledge in paragraph 50 that Plaintiffs
L6	are contending that the stock price reacted to this
L7	disclosure over multiple days; correct?
L8	A They're picking days
L9	There is a discussion that the stock price
20	decline on multiple days was caused by this.
21	Q Have you analyzed whether the stock price return
22	over those days collectively was statistically significant?
23	A I have not analyzed that. That would not be an
24	appropriate statistical test.
25	Plaintiffs' expert claims that the market is

1 efficient and has a methodology for testing how the stock 2 price reacts to information. And using Plaintiffs' expert's 3 own test, there is no reaction to the information on the 4 day -- the first day that it comes out. There's also no 5 reaction on the second day. There's also no reaction on the third day, and there's also no reaction on the fourth day. 6 7 My question is whether you looked at it. 8 Did you analyze whether it was statistically significant or not? 9 10 I've analyzed whether the day -- the appropriate 11 day, according to finance and the claims of market 12 efficiency, as well as according to Plaintiffs' expert's own 13 method, whether there was a statistically significant 14 reaction, and I have found that there was not. 15 I also found that there is not one the next day, 16 nor is there one the third day, nor is there one the fourth 17 day. 18 So I have known for all four days there is no 19 statistically significant reaction. Have you looked at whether it was statistically 20 0 21 significant over the window alleged by the Plaintiffs? 22 Α That is not even appropriate. Plaintiffs are alleging I think that a window 23 24 from 4/24 to 4/26.

No, I have not --

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1 I wouldn't even know how to --2. What kind of a test would I use for that? 3 I wouldn't know --4 No, I have not done that. 5 0 Okay. 6 Α That would not be an appropriate test. 7 Are you aware of cases where Courts have allowed 0 8 the use of multi-day-event windows? 9 Α I'm not aware of any case where one does what you 10 were suggesting that I do. 11 What I am aware is that a reaction may start 12 immediately but continue to react to something, but that is 13 not anything that we're seeing here. 14 Is it your opinion that news is always fully Q impounded into a company's stock price within one trading 15 16 day? 17 That's not my opinion. Α The academic literature shows that in an 18 19 efficient market, in the market in general, news begins to 20 react almost immediately and is -- the bulk of reaction is within the first few minutes. 21 22 But this isn't a question of how long it 23 continues to react. There's no reaction on the first day. It's not that the reaction continues for multiple days. 24 25 There's no reaction at all on the first day.

1	It's not statistically significant by any
2	standard that anyone would use.
3	Q Is it your opinion that news is always impounded
4	into a stock price within two trading days?
5	A So impounded is when the end of the reaction is,
6	not when the beginning of the reaction is.
7	There's no evidence that it reacted at all to
8	begin with, so you can't even figure out how long it would
9	be continuing to react because there is no reaction.
10	So fully impounded is when the end of a reaction
11	is. This reaction never even started.
12	Q I'm not talking about this reaction.
13	I'm asking, is it always the case that news is
14	impounded into a stock price within two trading days?
15	Does that happen 100 percent of the time?
16	A Nothing happens 100 percent of the time in my
17	experience.
18	And I don't know whether you're talking about in
19	an efficient market or
20	Q Yeah, is it your opinion that in an efficient
21	market news is always impounded into a company stock price
22	within two trading days?
23	A If it's an efficient market, sort of by
24	definition it should happen quickly. I think but you're
25	talking about the end of a reaction. I don't know how lone

1 the end of a reaction --2 Here we're not even seeing the beginning of a 3 reaction, so how long the end of a reaction takes is not really a relevant question here because there's no beginning 4 5 to the reaction. Let's look at the charts that you included on 6 7 pages 27 and 28. 8 The residual stock price return that you've included here from Dr. Nye's event study for April 23 is 9 10 negative 1.4 percent; correct? 11 Α Yes. And that residual return is what's left over 12 13 after you account for market and industry movements; 14 correct? 15 Α That's right. 16 And Dr Nye's event study has identified negative 0 17 residual returns on April 24th, 25th and 26th as well; 18 correct? 19 Α That's right. 20 Q And the April 25th one has a t-stat of 1.94; 21 right? 22 Α That's right, according to Dr. Nye's event study. And that would be statistically significant at a 23 0 94.6 percent confidence level? 24 25 Α I don't know.

1 Very close to the threshold for statistical 0 2 significance at a 95 percent confidence level; right? 3 Α Not for a test --4 Not for announcement that happened two days 5 earlier. 6 So if you want to --7 If you want to test multiple days, then you would 8 have to do some adjusted statistics so not --That is not something that you want to use for --9 10 if what you're testing is an announcement on April 23rd. 11 Q In your report --12 Where in your report do you identify any other 13 company-specific news about Apache that was disclosed 14 between April 23 and April 26? I don't know if I have identified news between 15 Α 16 April 23 and 26. 17 The report doesn't identify any other 0 company-specific news that was disclosed during this period; 18 19 right? I don't know if it does or not. 20 Α 21 As you sit here today, are you aware of any other 0 22 company-specific news that was disclosed between April 23 and April 26? 23 24 Well, there's the announcement on April 23. Α 25 think -- I think it is on April 23rd.

1	Q Right.
2	I'm asking if you're aware of any other news that
3	was disclosed about Apache between April 23rd and
4	April 26th.
5	A I don't know.
6	There might be something mentioned in my report.
7	There are analyst reports, yeah.
8	As I sit here, I don't have a specific
9	recollection, no.
LO	Q Paragraph 52, "Overall, the release of
L1	information that Plaintiffs allege was corrective of the
L2	alleged misrepresentations did not cause any statistically
L3	significant decline in Apache stock price, which
L4	demonstrates no link with any of the alleged
L5	misrepresentations and no price impact for the April 23,
L6	2019 alleged corrective disclosures due to the alleged
L7	misrepresentations."
L8	Do you see that?
L9	A Yes.
20	Q You're opining in paragraph 52 that the absence
21	of statistical significance demonstrates no link and no
22	price impact?
23	A It's evidence of no price impact, correct, using
24	the very
25	I'm sorry?

1	using the very model that Plaintiffs' expert	
2	has used to say that you can see a relationship between the	
3	alleged misrepresentations and the price and that that	
4	alleged misrepresentations, that that information	
5	Q You don't say	
6	A incorporated in the stock price.	
7	MS. HEFLEY: I want to make sure you let her	
8	finish.	
9	BY MR. RUSSO:	
10	Q You don't say it's evidence of no link; right?	
11	You say it demonstrates no link; correct?	
12	A I think that it's right, but I've just lost where	ž
13	I am now.	
14	Q Paragraph 52, first sentence says the alleged	
15	misrepresentations do not"	
16	A Yes.	
17	Q cause any statistical significance and	
18	demonstrates no price impact; right?	
19	A That's right.	
20	Q If you go down to the next heading you say,	
21	"Deferral was in response to extremely low gas prices and	
22	expected by the market."	
23	Right?	
24	A Yes, that's a heading.	
25	Q Why is the fact that the deferral was in response	;

1 to low gas prices, why does that matter for purposes of your 2 price impact opinion? 3 I'm sorry. I'm not sure I understand the question. 4 5 You highlight here the deferral being in response 0 to extremely low gas prices as one thing you analyzed. 6 7 Why were you analyzing that? 8 Why is that supportive of your opinion of no 9 price impact? 10 So gas prices became extremely low, and the 11 expectation was that, given the extremely low gas prices, 12 that there would be this deferral. So that was expected by 13 It was not a surprise to the market. the market. 14 So the market understood that with low gas prices 15 it wouldn't be economic for Apache to continue with 16 production at Alpine High. So the market understood and 17 expected this announcement. 18 So this announcement was not the new negative 19 news, but was rather expected by the market given the 20 current gas price conditions. 21 0 The economics of Alpine High at extremely low gas 22 prices is part of the alleged misrepresented information in 23 this case; right? 24 The alleged misrepresentations according to Α 25 Plaintiffs is that it would be economic for them to continue

under extremely low gas prices. But contrary to what 1 2 Plaintiffs are alleging the market was misled by, when there 3 were extremely low gas prices and Apache decided to defer their production, that was not a surprise to the market. 4 5 The market expected that. So the market understood. Contrary to what Plaintiffs are claiming, the 6 7 statements -- the alleged misleading statements made by 8 Plaintiffs were in fact not impacting the stock price, but the market was understanding that if gas prices got 9 extremely low that it would not be economical for Apache to 10 11 continue with production at Alpine High and that they were 12 not surprised by and in fact expected a deferral. 13 So this is contrary to what Plaintiffs are 14 claiming, and this is evidence that the alleged 15 misstatements were not in fact impacting the stock price, 16 but the stock price was moving, and the market expected that low prices would negatively impact the economics at Alpine 17 18 High and that there would be a curtailment of production 19 because of low prices that it wouldn't be economic at these 20 extremely low prices. 21 O So this is why --22 Your opinion here, are you taking the position in this case that the deferral being in response to extremely 23 low gas prices is evidence of no price impact because the 24

economics of Alpine High at low commodity prices is

25

unrelated to the alleged fraud, or are you taking the 1 2 position that it's not evidence of price impact simply 3 because the market expected it? 4 I'm saying that the price was not impacted by the 5 alleged misrepresentations. The expectation --6 7 It's not that the market thought what Plaintiffs 8 claim the market was being misled about. The market was not thinking that if prices go 9 10 very low that Alpine High will continue to be economic at 11 very extremely low prices. They're understanding that it's 12 not the case, and they're expecting, given how extremely low 13 the prices are, they're expecting that it will make sense 14 for Apache to defer production at Alpine High, and so there's no negative price reaction from the deferral. 15 16 This is something that, when prices went very 17 low, the market fully expected it to happen and thought it 18 was the right thing to happen. 19 0 All right. Now let's --20 Α So it's contrary --21 It's completely contrary to Plaintiffs' claim 22 that these misstatements were affecting the stock price. The market fully understood that the economics at 23 24 Alpine High would, you know, not be profitable when the 25 stock prices went as low as they -- when the gas prices went

Deposition of Lucy P. Allen In re Apache Corp. Securities Litigation 1 as low as they did, and they were --2 Rather than being negatively surprised from this 3 announcement of the deferral, it was to be expected and what 4 the market thought was the prudent and correct thing to do 5 in the environment of these very low prices. You agree that part of the misrepresented 6 7 information in this case -- the allegedly misrepresented 8 information in this case concerns the impact of the economics at Alpine High at low commodity prices; correct? 9 10 The statements impacted the market's view of how 11 gas prices -- of how prices -- of how gas prices would 12 impact Alpine High. 13 So Plaintiffs are claiming that that affected the 14 market's opinion. But contrary to what Plaintiffs are 15 claiming, the market was not negatively surprised when 16 Apache deferred its production at Alpine High. 17 thought -- the market was not surprised. There's no 18 negative surprise from that. That was expected by the 19 So the misstatements were not impacting the stock 20 price.

The only thing --

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The only thing --

The only thing that was impacting the stock price was the actual decline in gas prices, and that had already happened. The announcement was made.

1 0 My last question had nothing to do with the 2 impact. 3 All I asked was, do you agree that part of the alleged misrepresented information in this case concerned 4 5 the economics of Alpine High at low commodity prices? Have Plaintiffs alleged that as part of the 6 7 misrepresented information? 8 Α That's right. MS. HEFLEY: Object to -- object to the sidebar. 9 10 BY MR. RUSSO: 11 Q You say, "That's right"? 12 Yes, and that's one of the claims that I have Α 13 I don't -analyzed. 14 Rick, you started to talk over MS. HEFLEY: Ms. Allen a few times, if you'd just let her finish her 15 16 answers. 17 BY MR. RUSSO: 18 On April 23, 2019, Apache announced that it was 0 19 deferring gas production at Alpine High because of extremely 20 low gas prices; right? 21 That's right. Α 22 Did you conduct any investigation to determine 0 23 whether or not Apache's statement about the reasons for the 24 deferral was true? 25 Α I did not.

1	Q Did you do anything to determine whether there
2	were other factors or factors other than falling gas prices
3	that Apache considered in deciding to defer natural gas
4	production?
5	A I didn't conduct any independent investigation
6	other than what did the market learn and what did the market
7	understand, and I found no evidence that the market
8	understood anything other than that the deferral was because
9	of the extremely low gas prices, and the market fully
10	expected it, given the extremely low gas prices.
11	So this is exactly what the market expected to
12	happen. I found no evidence that the market ever understood
13	anything other than this was what was expected. So this
14	was
15	There was no surprise and no negative surprise
16	here about what
17	So I didn't do any independent investigation
18	other than reviewing everything that the analysts said about
19	this and what the news said about it and found no evidence
20	that anyone ever found there was any other reason, and the
21	reason that the company gave made sense to the market.
22	Q Ms. Allen, again, I did not ask you what the
23	market learned.
24	I asked you, did you do any investigation into
25	what Apache considered in making the decision to defer

- 1 oil -- or gas production.
  - Α I think you asked if I did any research about whether what they said was true.
    - Q I can repeat the question.
    - Again, let her finish, and if you MS. HEFLEY: want to ask the question, you can ask the question. She answered the question that you asked. You may disagree with that, but she did.
- I'll restate the question. 9 MR. RUSSO:
- BY MR. RUSSO: 10

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- 0 The question was, did you do anything to determine whether there were other factors or factors other than falling gas prices that Apache considered in deciding to defer natural gas production?
- Objection, asked and answered. MS. HEFLEY:
- Α What I investigated is what the market knew and what was publicly known, and I found that what was publicly known and what the market believed is that the response to the -- that it was expected to defer and that that made sense to the market and was expected, and there was never anything that the market learned or I could find was publicly available.
- BY MR. RUSSO: 23
- 24 And your opinion in this case is that the market 25 knew with 100 percent certainty that a deferral would occur;

1	correct?
2	A I pretty much said many times I don't think
3	anything is with 100 percent certainty.
4	Q So you're not offering an opinion that the market
5	was 100 percent certain that Apache would defer natural gas
6	production?
7	A I'm saying that it was expected. It was not
8	unexpected when it happened. It was not a negative
9	surprise. It was expected.
LO	Q The market
L1	Your opinion is the market viewed it as a
L2	100 percent certainty?
L3	Yes or no?
L4	MS. HEFLEY: Objection, asked and answered.
L5	A I'm not saying the market had 100 percent
L6	certainty. I'm not saying anything is 100 percent certain.
L7	BY MR. RUSSO:
L8	Q You are opining that it had zero impact on Apache
L9	stock price; right?
20	A I'm saying it had no impact. The evidence is
21	that it had no impact.
22	Q And that's because the market was absolutely
23	certain that a deferral would occur in your view; right?
24	MS. HEFLEY: Objection, mischaracterizes
25	testimony.

1 I have many reasons why there is no impact. Α 2 One reason there's no impact is because I'm using 3 the very exact test of whether the stock reacts and 4 finding -- using your expert's test, the test shows no 5 reaction. BY MR. RUSSO: 6 7 We're not talking about the statistical 8 significance, Ms. Allen. We're talking about your opinion that this is expected. 9 10 You opine that there is zero impact related to 11 this disclosure. I'm asking, is that because you believe 12 that the market was absolutely 100 percent certain that this 13 deferral would occur? 14 Α I have tried to answer that question a number of 15 times. My testimony --16 I don't think my testimony today at all is that 17 anything is ever 100 percent certain. 18 My testimony is that there is no price impact. I 19 have many reasons for why there is no price impact. One of the reasons that I find that there is no 20 21 price impact is, your expert's own test of how the market 22 reacts to information shows that there is no reaction. He has a test, and this test is showing no 23 24 reaction, that the reaction would not be differentiated from 25 zero.

Another reason that I find that there is no price impact is that the market -- that the analyst, rather than saying they were surprised and negatively surprised by this deferral, said that they expected this and that they considered this a prudent and the right thing to do given the extremely low gas prices. Prior --Further evidence of no price impact is, when the alleged misstatements were made that Alpine High would be economic under low gas prices or under low prices, rather than analysts repeating and incorporating that information into their valuation of the company, I found that not one of the analysts repeated that information, but to the contrary analysts in fact said that if gas prices or prices go extremely low, it will be not economic. So I have very many reasons for finding that there is no price impact, and the fact that analysts in the market expected this deferral, given low gas prices, is just one of those reasons. 0 Your --Let's turn to paragraph 60.

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Strike that. Strike that.

Let's look at paragraph 56. You cite two analysts in paragraph 56; right?

Α I do cite --

1 I do cite two analysts, yep. 2 Q In 57 you cite one analyst's report from 3 Macquarie; right? 4 Α Paragraph 57? 5 0 Yes. Is another analyst, that's correct. 6 Α 7 Those are the three analyst reports you cite in 0 8 this report in support of your position that Apache's announcement of the deferral of gas production at Alpine 9 10 High on April 23, 2019 was expected and not a surprise to 11 the market; right? 12 Well, I also cited the other ones earlier. Α 13 I think we mentioned some before that were saying 14 that if they went low, they would expect it to be a problem. 15 T mean --16 I'm talking about paragraphs 56 and 57. 17 are three --18 I know, but it's the same point; right? Α 19 So you previously asked me about analysts that 20 said that if prices went low, they would expect it to be not 21 economic at Alpine High. So that is --22 I cited them earlier. You just -- you just 23 pointed --24 This is --0 25 Rick, you're killing the court MS. HEFLEY:

1 You've got to wait. reporter. You've got to let her 2 finish her answer. 3 Your question --4 BY MR. RUSSO: 5 I've asked 56 and 57. 0 I'm asking what reports do you cite in paragraphs 6 7 56 and 57? 8 That's the question. 9 MS. HEFLEY: That wasn't your question. 10 asked about analysts on this point. Now you're 11 limiting it to 56 and 57, which is fine. BY MR. RUSSO: 12 13 There's a statement at the top of 56, right, that 0 says, "According to analysts, Apache's announcement of the 14 deferral of gas production at Alpine High on April 23, 2019 15 16 was expected and not a surprise to the market." 17 Correct? 18 Α Yes. 19 There are two analyst reports cited in the text 20 of paragraph 56; right? 21 Α That's correct. 22 Paragraph 57 contains a quote from one analyst; 0 23 correct? 24 Α Can you repeat that question? 25 Paragraph 57 contains a quote from one analyst Q

1 report; correct? 2 Α Yeah, it's one analyst report. 3 I think it's multiple analysts. 4 That's what I was listening for. 5 Were these the only three analyst reports that Q were issued in the days following the April 23 disclosures? 6 7 Α No, I don't believe so. 8 Q In paragraph 56, the first cite is Stephens --Stephens' analyst report; right? 9 10 Α That's right. 11 Q Stephens, the part you highlighted here is, "We 12 do not think it is a surprise to the market, " correct? 13 Α Yes. 14 Does that statement, "We do not think it is a Q 15 surprise to the market," express 100 percent certainty that 16 the market was expecting this news? 17 No, it doesn't say anything with 100 percent Α 18 certainty. 19 It also uses the word "we," right, which 20 indicates that it's reflecting the Stephens analyst opinion; right? 21 22 Α That's right. The analyst reports tend to be 23 their reports from those analysts. That's correct. 24 Is there any analysis or any evidence cited in 0 25 that report demonstrating that the market believes the

1 effect of this news? Are you asking whether they had evidence in the 2 Α 3 report that --4 Q You reviewed the report. 5 Was there evidence linking -- to support this notion that Stephens did not think it was a surprise to the 6 7 market? 8 Α Well, I don't recall when the -- what time the report is written but, for example, if it had the closing 9 price, then there would be evidence because the price didn't 10 11 react. 12 The quote that you included here says, "We do not 0 13 think it is a surprise to the market that the depressed Waha 14 pricing is hampering Alpine's cash generative capabilities," right? 15 16 Α That's right. 17 0 It doesn't say that Alpine's -- Apache's decision to defer production was not a surprise to the market, does 18 19 it? 20 It doesn't particularly say that. The report Α 21 does not say that they were surprised by this. In fact, I 22 don't think any of the reports said that they were surprised by this. 23 24 The Stephens report also stated that it viewed 0 25 Apache's disclosure as a negative, didn't it?

1 It says, "Optically, we view this as a negative." Α 2 So they don't change their valuation of the 3 company. They're saying the optics are negative. 57, the Macquarie report, Macquarie also referred 4 Q 5 to this disclosure as a slight negative; right? Α That sounds like --6 7 I think that might be correct. 8 Q The Macquarie report which you quoted here also says that the disclosure was "likely expected by investors," 9 10 right? 11 Α Yeah, they say they think it's prudent and likely 12 expected. 13 Macquarie was expressing --0 14 Strike that. Macquarie was not expressing 100 percent 15 16 certainty that the deferral was expected by investors; 17 right? 18 I don't see anyone saying anything is 100 percent Α 19 certain. 20 And Macquarie's statement makes clear that it 0 21 didn't know whether or not it was expected; right? 22 It was expressing a view that it was likely 23 expected. 24 It says "likely expected -- prudent and likely Α 25 expected."

	Q Do you recall the Macquarte report also saying
2	that the announcement placed downside risks to its
3	production estimates?
4	A Sure. If they're deferring production, it would
5	certainly add downside risk to the production estimates
6	so
7	Q Not if the market already knew it was coming;
8	right?
9	Did you look at whether any analyst changed their
10	production estimates for Apache following the April 23
11	disclosure?
12	A I think they might have changed their production
13	estimates.
14	The question is whether they changed their price
15	targets or whether they changed their valuation of the
16	company.
17	I think they might have changed their production
18	estimates.
19	They're actually deferring production, so it
20	would make some sense that they should change their actual
21	production estimates.
22	Q But again, your opinion is that the market fully
23	expected this to happen already; right?
24	A That it was not unexpected, that it was expected
25	given the environment, and that it was incorporated into the

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- 1 stock price, that's right.
  - Q And the fact that analysts are adjusting their production targets is not relevant to your assessment of whether the market expected this to occur?
    - A I think if they say that it's --

No one says they're surprised by it, and they're saying that it's expected, and they're not changing their price targets, and the price does not move. That's a lot of evidence that this is not impacting the stock price.

The actual price is not moving according to your own expert's method for determining whether information impacts the stock price.

The analysts are saying that it was expected. They're not saying it was a surprise, and they're not changing their price targets, and there are a lot of analysts covering the company.

I'm not really sure what more evidence you could have that there wasn't price impact.

- Q But you didn't look at whether any analyst -You didn't analyze that in your report, right,
  whether any analyst changed their production estimates for
  Apache following the disclosure?
- A Well, they're actually deferring the production, so I'm not sure what the --
  - You know, I don't think that would --

1 The question --2. Yeah, I didn't --3 They're deferring production. 4 But your opinion is, the market already knew this Q 5 was coming; right? Expected. 6 Α 7 MS. HEFLEY: Objection. 8 Α They did not consider this negative, that there's 9 no price impact. BY MR. RUSSO: 10 11 Q Well, what's the difference between expecting 12 something and knowing it was coming? 13 Expecting it and having it being incorporated in Α 14 the stock price is what I'm saying. 15 There's no --16 This expectation was incorporated in the stock 17 price, so there's no movement in the stock price. It's not 18 impacting the stock price. It's not impacting the value of 19 the company. That's what I'm saying. 20 And that's what all the evidence is saying, 21 including your expert's own analysis of whether it's 22 impacting the stock price. And changes in production estimates following 23 24 this announcement has no bearing for you on whether or not this announcement was expected by the market? 25

A I don't think that would be a good way to test it. So until they make the announcement that they're deferring the production --

So the expectation that this will happen, if the analysts are not issuing analyst reports because there's not announcement by the company, so as the gas prices are declining, the expectation is that this will happen.

But the -- and there's --

There was an expectation all along that, as gas prices would happen, that this would happen. So it wasn't a surprise that this would happen.

As you sort of wouldn't let me answer to a prior question when it was actually responsive to your question. You had asked me about my quotes of a whole three different sets of analysts who were saying that when prices go down, this is what they would expect to happen. They would expect to not be economical at Alpine High when prices get very low.

So this is all already incorporated into the stock price. So to issue a new analyst report saying, as prices go down, we expect that they will cut production and issue a report with no new -- with nothing new other than, of course as this happened, this is what we'll expect, there's no particular reason to expect an analyst to issue a report then.

1 So they're not updating their production numbers 2 every single time. It's not -- it's not relevant. It's 3 already incorporated into the stock price and into their valuation. 4 5 When they're valuing the company, they're already -- their valuation already includes the knowledge 6 7 that if gas prices get too low, it will not be economical to 8 try to get gas out of Alpine High. Is your testimony then that the four analyst 9 Q 10 reports you cite in paragraph 43 say that if gas prices 11 continue to fall, Apache will have to defer production at 12 Alpine High? 13 Do the analysts say that? 14 I'm sorry. I don't understand that question. Α Did the four analysts that you cite in paragraph 15 0 16 43, which we're now referring to, did any of those analysts 17 say that if prices continue to fall, Apache will continue to 18 defer production at Alpine High? 19 I don't know if they explicitly say that. I think -- I think it's --20 21 It's economically, you know --22 A business will not -- to the extent that the 23 marginal cost is greater than the marginal benefit of what 24 you're going to get out, you're not going to continue to --

you're not going to continue to do something that costs you

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1 more to do than you can sell it for basically. 2 So that's true --3 I don't think analysts are going to put that in every analyst report, but it's true of pretty much every --4 5 You know, if you're making widgets to the point when the price of widgets go so low that you can't sell it 6 7 for more than it costs you to make it, you will stop making 8 widgets. So I don't think analysts necessarily put that 9 10 into an analyst report, but pretty much know --11 I think that sort of basic principle that when 12 the cost of, you know, getting something out of the ground 13 is more than you can sell it for, you're going to stop doing 14 that is a pretty basic principle -- economic principle. Did any analyst change their financial 15 0 16 projections for Apache following the April 23 disclosures? 17 Did they change their what? Α 18 Their financial projections for the company. 0 19 Oh, well, when they issue new reports, they might 20 change their financial projections of the company, so their actual --21 22 I mean, for example, the revenue and things may -- they may update those. Yeah, they're probably 23 24 updating those numbers because they're issuing a new report, 25 and those numbers will be updated. It's not necessarily

1 changing the value of the company but, yeah, you would 2 expect them to update their numbers, right. 3 So if prices have gone so low that you're not going to start taking stuff out of the ground, then you 4 5 would expect, you know, your projections for the next whatever -- the remainder of the year and things, you would 6 7 update those. 8 Q They would update those after the disclosure on 9 April 23? 10 Likely, yeah. Α 11 So the company --12 Yes, you would expect that. I don't particularly 13 recall that, but that would be my expectation. 14 That's not an analysis you conducted? Q 15 Α No, I don't recall looking at that. 16 MR. RUSSO: Let's mark Tab 12. 17 (Exhibit 4 was marked for identification.) 18 MR. RUSSO: Are we at Allen 4? 19 **VIDEOGRAPHER:** Yes. BY MR. RUSSO: 20 21 So we're marking as Allen 4 an April 26, 2019 0 22 Cowen analyst report. 23 Have you seen this report before, Ms. Allen? 24 Α Sorry, I have to wait to take a look at it. 25 Do you recall reviewing this? Q

1	А	I was looking to see if I do.
2		I would think I have, but we have them in color,
3	I think.	It's not honestly ringing a bell with me, but
4	Q	I apologize. This is how they were produced to
5	us.	
6	А	That's fine.
7		I was going to look and see if it's on my list.
8		April 26, 2019?
9	Q	Entry 427.
10	А	I likely have, but I've looked at a lot of them.
11	Q	This report looks at numerous companies in the
12	oil and ga	s exploration and production industry.
13		Do you see that?
14	А	Oh, so it's not Apache-specific.
15	Q	Correct.
16		Underneath the date you see it says, "Oil and Gas
17	Exploratio	n and Production"?
18	А	Yeah.
19	Q	And the first sentence refers to "Our 30 E&P
20	names."	
21	А	Yes.
22	Q	If you turn to page 8 of the report.
23	А	Okay.
24	Q	Cowen lists its first quarter '19 estimate
25	changes?	

1 Apache's is reduced by 173 percent. 2 Do you see that? 3 Α I'm on page 8. Sorry. 4 Page 8, Figure 7. Sorry, I should have said Q 5 "Figure 7." 6 Α Okay. 7 Cowen E&P estimate changes? Q 8 Α Wow, let me see if I can --9 MS. HEFLEY: I'm having a hard time seeing it. 10 It's really small. 11 MR. RUSSO: Can we blow it up here? 12 You might be able to download it, MS. HEFLEY: 13 Ms. Allen. 14 THE WITNESS: I have it downloaded. 15 MS. HEFLEY: Okay. 16 THE WITNESS: I need to see if I can figure out 17 how to make it bigger. 18 It's blown up pretty big on the MR. RUSSO: 19 screen here. 20 Α Yeah, well, I have you on my like very small 21 They're all like little --22 So I think I made it bigger. The first row, "APA," is that what you want? 23 24 BY MR. RUSSO: 25 173 percent reduction in adjusted EPS? Q

1 Α I think that's what that says. It's hard for me 2 to read. 3 0 It's the largest reduction of any of the 30 4 companies listed here; right? 5 Α Yeah, that might be. If you look at Figure 8 on the next page, E&P 6 0 7 2019 estimate change, you see there's a 26 percent reduction 8 for Apache in adjusted EPS for 2019? 9 Α So now I'm going --10 You want me to go down to the next chart below 11 it? 12 0 Yeah, the next page. 13 Okay, yeah. Α 14 Do you see 26 percent reduction there? Q 15 Α I do. 16 0 Do you see there's also a 3 percent reduction 17 total production estimates? 18 Α I see the 26 percent. 19 0 Total production, the previous --20 Α I'm sorry. 21 The total production right next to the 0 22 26 percent, do you see it says 490, 477 and 3 percent? 23 Α Yep. 24 0 That's a 3 percent reduction in the total 25 production estimates for 2019; right?

1 Α That's what -- appears to be what it says. 2 It's so hard to read. 3 0 If you look down to the next chart, Figure 9, E&P 4 2020 estimate changes. 5 Do you see there's a 45 percent reduction for Apache's -- or Cowen's 2020 EPS estimate for reduction? 6 7 Α Yep, I think I see that. 8 MR. RUSSO: You can put that aside. Now would be 9 a good time for a break. 10 Lucy, do you need a lunch break, or MS. HEFLEY: 11 do you want a short break? 12 THE WITNESS: How about a medium break, a quick 13 lunch break? 14 We can go off the record. MS. HEFLEY: 15 VIDEOGRAPHER: Off the record 2:18 p.m. 16 (Recess was taken.) 17 VIDEOGRAPHER: Back on the record 2:56 p.m. BY MR. RUSSO: 18 19 0 Good afternoon, Ms. Allen. Let's talk about 20 the --Let's turn to the paragraph 63 of your report 21 22 where you talk about the October 25, 2019 corrective disclosure. 23 24 Α Okay. 25 On October 25th Apache announced that Steven Q

1 Keenan was resigning; right? 2 Α That's right. 3 0 Did Apache disclose any other news to the market 4 on that date? 5 Α I don't believe so. Under your alternative event study, did you find 6 0 7 that Apache's stock price experienced a statistically 8 significant stock price decline on October 25, 2019? Α Yes, I think I'm referring to both the 9 alternative event study, as well as Dr. Nye's event study, 10 11 the stock price declines significantly. 12 0 In paragraph 64 you say that the October 25th 13 corrective disclosure shows no price impact, including for 14 the following reasons, and you list two; right? 15 Α Yes. 16 0 The first one is that the analyst commentary 17 following the announcement explicitly attributed Apache's 18 stock price decline to market speculation about Apache 19 Suriname exploration and not due to any news about Alpine 20 High; right? 21 Right. Α And the second is that no new information about 22 0 23 Alpine High was revealed? 24 Α Right. Are you expressing an opinion in this case that 25 Q

1	the news of Mr. Keenan's departure did not cause Apache's
2	stock price decline?
3	A No.
4	Q So do you agree that the news regarding
5	Mr. Keenan's departure is what caused the stock price
6	decline?
7	A I think the speculation that came from the news
8	of his departure, that's right.
9	Q And your price impact opinion, is it on the view
LO	that the market was reacting entirely to these concerns
L1	about Suriname and not to anything about Alpine High; right?
L2	A There was no new information about Alpine High,
L3	so there was no new information revealed about Alpine High.
L4	And all of the analysts that reported on this
L5	said that the price exclusively attribute the price
L6	decline on that date is speculation about Suriname about
L7	Apache Suriname exploration.
L8	Q Did you review any internal documents to
L9	determine whether Mr. Keenan's resignation was related to
20	Suriname or Alpine High?
21	A I did not review internal documents.
22	That would not be relevant to the analysis that I
23	did.
24	Q Did Apache disclose any news to the market on
25	October 25th about Suriname?

1 Yes, we could find --Α 2 We looked at all the news articles and analyst 3 reports that we could find and couldn't find any that 4 attributed it to bad -- new news about Alpine High or 5 reductions -- new news about Alpine High, but rather just speculation about Suriname. 6 7 Did every one of those news articles mention Suriname? 8 No, I don't think all of them did. 9 Α 10 How many news articles did you review from 11 October 25th? We looked at all the news articles that we could 12 Α 13 find on October 25th that were about Apache -- I don't know 14 how many that was -- and after that time period. So we never found any news article that said that 15 16 the stock price was dropping because of new information 17 about or new expectations about Alpine High. 18 The three reports that you cite, you said a 0 19 CreditSuisse report, an RBC report, and a Truist Securities 20 report; right? 21 That's right. Α 22 0 All of those reports --Each of those reports referenced Alpine High; 23 24 right? 25 Yes, they all referenced Alpine High. Α

1 And they all stated that Mr. Keenan oversaw or 0 2 was credited with the Alpine High discovery; right? 3 Α That's right. And some of them specifically link his departure 4 Q 5 to issues at Alpine High; right? I think that's right, but not to them 6 Α 7 understanding anything new about Alpine High. 8 They say that Alpine High had issues, given 9 declining prices. 10 Mr. Keenan's departure was disclosed for the 0 11 first time on October 25, 2019; right? 12 Α That's right. 13 Can we mark as -- I believe we're at MR. RUSSO: 14 Allen Exhibit 5. It's Tab 15. (Exhibit 5 was marked for identification.) 15 16 MR. RUSSO: Am I right that we're on Exhibit 5? 17 VIDEOGRAPHER: Correct. 18 BY MR. RUSSO: 19 Ms. Allen, do you recognize Exhibit 5 as the RBC 20 report that was issued October 25, 2019? 21 Α I have to open it. 22 Yes. The title of this report is that it's 23 0 24 Mr. Keenan's resigning that's causing the stock weakness; 25 right?

1	A 2	Yes.
2	Q ]	If you look at the fourth paragraph down, the
3	first senter	nce says that Mr. Keenan was a major part of the
4	team that di	iscovered the Alpine High play that has been a
5	significant	investment for APA; right?
6	A 5	Yes.
7	Q 7	The portion of this report that you cite is in
8	the second p	paragraph; right?
9	7	You cite the second sentence of the second
10	paragraph, t	the one that starts, "We think"?
11	A I	Let me try to make it bigger.
12	Z	Yes, the second paragraph.
13	Q 7	The sentence immediately after the one you cite
14	says, "Based	d on our conversation with APA, as of the
15	resignation	date the company had not reached the target
16	objective at	t Makal prospect, and the resignation was related
17	to other mat	tters."
18	F	Right?
19	A 3	Yes.
20	Q 5	You didn't cite that sentence in your report, did
21	you?	
22	A 1	No.
23	Q V	What time was this report published, this RBC
24	report?	
25	A I	Looks like 10/19.

1 So when RBC is talking about APA share weakness, 0 2 it's referring to the share weakness that occurred in 3 between 9:30 and 10:15 a.m., right? I don't know what --4 Α 5 They're saying between 9:44. They're saying the stock traded down following the 9:44. 6 7 Q Okay. 8 Yeah, I'm not sure what they're -- what 9 they're --10 I'm not sure exactly what they're referring to, 11 but... 12 Well, they are referring to an 8 percent stock 0 13 price decline after the 9:44 a.m. announcement of 14 Mr. Keenan's resignation; right? 15 Α Yeah, I think that's right. 16 And it can't be referring to stock price declines 0 17 that occurred after 10:19 a.m. when it was published; right? 18 Α That's right. 19 0 So this is talking about declines that have --20 This window is talking about a decline that 21 occurred within about a half-hour of trading; right? 22 Α Yeah, I'm not sure. I mean, I think it would have to be within that 23 24 time period, but... 25 When was it first disclosed by the company that Q

1 Mr. Keenan's resignation was not related to issues 2. with Suriname? 3 I don't recall the specific timing. 4 Q It had to be before 10:19, right, if RBC was 5 reporting on it? They're saying that based on our 6 7 conversations with them. So I don't know when -- when the 8 company says that. Well, it was reported as of 10:19 when RBC 9 Q 10 reported it; right? 11 MS. HEFLEY: Objection, misstating the document. 12 I don't know. I don't know the exact timing. Α 13 This seems to say that it's disseminated at 10:19, but I 14 have not checked the time. 15 BY MR. RUSSO: 16 Do you know whether or know what time of day Apache disclosed that this was unrelated to Suriname? 17 18 Α You just asked me that question, and I don't 19 recall the time. 20 But you do see that in this report RBC is stating 0 21 that, based on a conversation with Apache, that the 22 resignation was unrelated to Suriname and was due to other matters; right? 23 24 Α It says, based on our conversation with APA, the 25 resignation was related to other matters.

1	Q Their conversation which they disseminated with
2	this report; correct?
3	A They don't disseminate the conversation.
4	They disseminate the comment that says, based on
5	our conversation with APA, as of the resignation date, the
6	company had not reached the target objective at the Maka1
7	prospect, and the resignation was related to other matters.
8	Q Did you conduct any analysis of how Apache's
9	stock price performed following Apache's statement that the
10	resignation was unrelated to Suriname and related to other
11	matters?
12	MS. HEFLEY: Objection, misstates the evidence.
13	Are you referring to the RBC report's statement,
14	or are you referring to some statement by Apache?
15	BY MR. RUSSO:
16	Q I'm saying it was disclosed on this date. We
17	talked about this earlier that Apache had said that it was
18	not related to Suriname.
19	I'm asking, did you any analysis of how the stock
20	price reacted after that information was disseminated to the
21	market?
22	MS. HEFLEY: RBC disseminated this document
23	you're talking about? Is that what you're asking?
24	MR. RUSSO: was disseminated.
25	MS. HEFLEY: I'm sorry. You cut out.

BY MR. RUSSO:

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Was there any analysis done of how the market Q reacted after it learned about the fact that Apache had said that it was unrelated to Suriname and related to other matters?

> Objection, misstates the document. MS. HEFLEY:

I didn't do any specific intraday analysis. Α

I am aware that the stock -- the analysts and the news stories are reporting that the stock dropped a lot more and then came back up again after it was -- indicating that after the market was --

There was some indication that it wasn't related to Suriname.

So what the news stories and the analysts were saying is that the drop was speculation that this could be bad news about Suriname.

And then the stock dropped much more to begin with and then came back is what I have read in the analyst reports and news stories, but I did not do or I do not recall looking at intraday prices, and I did not do a specific analysis of how much it reacted before and after individual pieces, whatever, like this report came out, for example. I did not do that. And I don't know the -- I've not analyzed the timing of this report.

But you do know, you testified earlier, that Q

1 under your event study there was a statistically significant 2 stock price decline on this date; right? 3 According to both the alternative event study and 4 your expert Dr. Nye's event study, there is a statistically 5 significant reaction on this date that nobody has attributed to any new news about Alpine High and that has been entirely 6 7 attributed to speculation about Suriname. 8 Q And it's a statistically significant stock price decline that existed even after the company -- even after it 9 10 was reported that the company stated that the resignation 11 was not related to Suriname; right? I don't know if that's the case. 12 Α 13 statistically significant for the one-day reaction. 14 I'm sorry. Was there a question? Yeah. 15 You said you don't know if that's the 0 16 case. 17 What don't you know? 18 There was a statistically significantly stock 19 price reaction for the day -- during the trading day. 20 was reported that the company said that the resignation had 21 nothing to do with Suriname; right? 22 MS. HEFLEY: Objection, misstates the document. It doesn't say the resignation has nothing to do 23 24 with Suriname. 25 It says, based on our conversations with APA, the

1 company had not reached the target objective at the Maka1 2 prospect, which is in Suriname, and the resignation was 3 related to other matters. 4 So I feel not reaching the targeted objective 5 is -- that is related to Suriname. BY MR. RUSSO: 6 7 The end of that sentence that you just read was, 0 8 "The resignation was related to other matters," right? Α 9 Yes. 10 It doesn't say it had nothing to do with 11 Suriname. It says it was related to other matters. 12 MR. RUSSO: Let's mark as Exhibit 6 -- Allen 13 Exhibit 6 Tab 17. 14 (Exhibit 6 was marked for identification.) 15 BY MR. RUSSO: 16 0 Do you recognize Allen Exhibit 6? 17 Α Yes. 18 What is it? 0 19 Α It's a SunTrust report on October 25, 2019. 20 0 If you look at paragraph 69 of your report, is 21 this the Truist Securities report that you're referring to? 22 Α Yes, I think this is. Yeah, I think they changed their name. 23 I think we should have made that clearer. 24 25 The title of this report is "Resignation Not Q

1 Linked to Upcoming Suriname Well Result, " right? 2 Α Yes. 3 0 Then the second sentence here, the one after the 4 one you've cited, SunTrust or Truist says, "We do not 5 believe the departure is linked to results of the well, as it does not appear that the well has reached its target 6 7 formation yet." 8 Right? 9 Α Yes. 10 It also notes in this report that Mr. Keenan was 11 part of a team that discovered Alpine High and another 12 Apache executive; right? 13 It does say that. Α 14 Let's mark as Allen 7 Tab 14. MR. RUSSO: (Exhibit 7 was marked for identification.) 15 16 BY MR. RUSSO: 17 0 Ms. Allen, do you recognize Allen Exhibit 7? 18 Α I haven't gotten it yet. 19 0 Sorry. 20 Α Yes. 21 Is this the CreditSuisse analyst report that 0 22 you've cited in paragraph 67 of your report? 23 Α Yes. 24 0 This report does, like the others, note that APA 25 claims the resignation is not connected to the exploration

prospect at Suriname; right? 1 I think that's correct, but I have not seen it. 2 Α 3 0 Under "Timing of resignation is concerning," there's a parenthetical in the first section. 4 5 Do you see that? "While Mr. Keenan's exact role in Suriname is not 6 7 clear, APA claims the resignation is not connected to the 8 exploration project." 9 Yeah, I mean there's a longer sentence which 10 again says that the stock price drop is again because of --11 that the timing -- given the timing of the departure and 12 given that it's a critical time for Suriname, it is leading 13 to negative speculation by the market about Suriname and 14 Apache's prospects at Suriname. 15 In the first paragraph, this report also notes Q 16 that Mr. Keenan oversaw the discovery of Alpine High; right? 17 Α Yes. It says, "It's been an economic disappointment 18 for investors, " right? 19 20 Α Yeah, partly due to the natural gas and NGL prices, which was also what the last one said, which was 21 22 part of the sentence that you --The parts you're not reading from all of these 23 all say that the reason Apache -- Alpine High was not doing 24

well was because of the poor prices.

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This one says "partly due;" right? 1 0 2 Α This one says "At least partly." 3 MR. RUSSO: Let's mark as Allen Exhibit 8 Tab 19. (Exhibit 8 was marked for identification.) 4 5 BY MR. RUSSO: Allen 8 is a Reuters article with a headline, 6 7 "Oil industry veteran Steven Keenan resigns from Apache 8 Corp." 9 Ms. Allen, do you recognize this article, or have 10 you seen it before? 11 А I believe so. 12 Do you recall reviewing this document in 0 13 connection with forming your opinions in this case? 14 Α I certainly don't recall reviewing it for any other purpose but, yeah, my recollection is that I've seen 15 16 this before, and it would only be in the context of this 17 matter. 18 Well, did you review this while you were 0 19 preparing your report, or did you review it after you 20 submitted your report? 21 Α I believe that I have reviewed this, but I have 22 reviewed a lot of articles, and they all sound very similar, so I can't -- I couldn't tell you that. 23 24 If you go to the fifth paragraph down here, it 0 25 "Keenan is widely credited with the Alpine High find savs,

1 in West Texas in 2016," right? 2 Α Yes. 3 0 The second paragraph from the top says, 4 "Houston-based Apache told Reuters that Keenan's resignation 5 is not connected to the well the company is currently drilling offshore in Suriname." 6 7 Do you see that? 8 Α Yes. 9 If you go down to the paragraph that starts, Q "When Alpine High." 10 11 It says, "When Alpine High was discovered, 12 Apache's shares spiked as much as 14 percent with Chief 13 Executive Officer John Christmann calling it a world class 14 resource." 15 Do you see that? 16 Α Yes. 17 That statement about being a "world class 0 18 resource" is one of the alleged misstatements in this case; 19 right? 20 Α Yes. 21 The article also notes that Apache's shares 0 22 spiked after the announcement of Alpine High; right? Α 23 Yes. 24 It also says that more recently Alpine High has 25 struggled due to lower gas prices.

1 So, again, this story -- this article is just 2 entirely consistent with --3 It's not saying there's any new information about Alpine High. 4 5 It's saying there had previously been poor information about Alpine High, which is due to lower gas 6 7 prices. Do you recall when Mr. Christmann first referred 8 Q to Alpine High as a world class resource? 9 I think it's at the beginning of the class 10 11 I think that's when they mentioned to the market 12 about Alpine High. 13 Let's go back and look at the Complaint, which is 14 Allen Exhibit 3. 15 Can you look at paragraph 192? 16 It starts on the bottom of page 79 and refers to 17 September 7, 2016. 18 Do you see that? 19 Α Yep. If you turn over to 80, you'll see a second line 20 0 21 that says, "During which Defendants touted Alpine High as a 22 world class resource play"? 23 Α Yes. 24 0 That statement was made on September 7, 2016; 25 right?

1 Α I believe that's correct. 2 Q If you can turn to Appendix C, the chart of 3 alleged misrepresentations, entry 1 from September 7, is Mr. Christmann's statement that it was a world class 4 5 resource play listed here? I'm sorry. Did you answer? 6 7 Α I don't think so. 8 Q You mean you don't think it's listed there, or 9 you don't think you answered yet, just so the record is 10 clear? 11 А I don't think it's on the --It's not on Appendix C, I don't believe. 12 13 Let's turn to paragraph 75 of your report --0 14 Α Okay. 15 -- where you start discussing the March 16 0 16 corrective. 17 MS. HEFLEY: Sorry. What paragraph did you say? MR. RUSSO: 18 75. 19 BY MR. RUSSO: 20 You say in the first sentence here, "Plaintiffs 0 claim that the March 16, 2020 Seeking Alpha article 21 22 disclosed how Alpine High had left Apache particularly 23 challenged amongst its E&P peers with high levels of debt." 24 Do you see that? 25 Α Yes.

1	Q Is it your understanding that Plaintiffs'
2	allegation of loss causation for March 16th is based solely
3	on the publication of the Seeking Alpha article?
4	A It's the only alleged corrective disclosure that
5	Plaintiffs allege on March 16th, is my recollection.
6	Q The Seeking Alpha article mentioned Alpine High;
7	right?
8	A Yes, it mentioned them in a way that is actually
9	contrary to Plaintiffs' claim. Rather than saying something
10	new and negative about Alpine High, they actually continue
11	to call it a "wet gas rich."
12	So Plaintiffs' allegation is that in part that
13	the company misled investors and, when in truth it was
14	really dry gas rather than the more valuable oil and wet
15	gas.
16	And here at the very end of the class period in
17	this corrective disclosures, rather than saying anything new
18	or negative about Alpine High, in fact what Seeking Alpha
19	says is, it describes it as "wet gas rich."
20	Q The article did discuss Apache's financial
21	health, right, and its high levels of debt?
22	A It did say
23	It did report its debt information that was
24	previously known, but it's not new information about the
25	debt. Debt levels are publicly known.

1 Plaintiffs are not alleging the debt levels were 2 misrepresented. 3 0 You say in --4 One of the reasons that you identify in your 5 report for why March 16th is not evidence of price impact, in paragraph 88 you say both Dr. Nye's event study model and 6 7 the alternative event study model are not applicable to this 8 date due to increased market volatility; right? That's right. 9 Α 10 And is your claim here that the COVID pandemic 0 11 and oil price issues led to an overall increase in market 12 volatility in March of 2020? 13 I think that is what led to the increase in 14 volatility, but what is true is that there's a dramatic 15 increase in volatility. 16 The COVID pandemic and oil price issues you 17 reference, they're not Apache-specific events; right? 18 Α No, they're not Apache-specific events. 19 They're overall --20 No. The whole market is much more volatile, and 21 in particular companies that are in the oil and gas 22 business, and this particular region is also guite volatile. 23 Both your event study and Dr. Nye's event study 24 control for market and industry events; right? 25 Α They do not control for the increased volatility

Q Does increased volatility change the magnitude of a residual return?

A It changes whether that residual return is -
I mean, it could. It could do that as well. So
the whole market is different.

But what it certainly does is, it doesn't allow you to test whether it's statistically significant or not. Your statistical significant tests are not valid.

They're testing for, is this unusual given what was happening during the control period, and this is very different than the control period. This is much more volatile.

And I show you that not only -- if you use these tests, not only would you find that Apache has statistically significant results, you find that Apache has statistically significant results for the days before and after this, but you would also appear to find that the majority of other peer companies also have statistically significant results.

So if you just mindlessly apply Dr. Nye's methodology using a control period that is not controlling for the volatility during this period, you find that the majority of days and the majority of companies appear to have statistically significant results, you know, up or down.

1 0 Did you, in your alternative event study, did you 2 control for increased volatility during this time period? 3 Α I just applied the same methodology as Dr. Nye and just do more what I think is a more appropriate 4 5 industry index so the control is better for the market and is a better fit. I did not make an adjustment for this 6 7 dramatically increased volatility. And the very day of this announcement, I think 8 March 16 is, if you look at the VIX volatility index, this 9 is -- I think it's the highest day overall period. 10 11 So it's a crazy day of volatility in the market. 12 It's possible to adjust an event study to account 13 for periods of heightened market volatility; right? 14 Α How precisely to do that is -- I think would be -- is not standard. 15 16 So what is more standard is, if volatility --17 So sometimes volatility has increased, and so 18 instead of using, for example, a one-year control period, if 19 volatility is, you know, much higher in, say, a three-month 20 period around the period you're talking about, then you 21 might shorten your control period to only be three months 22 that includes this very high-volatility period. So how exactly to do it during this one crazy day 23 I think is something that there won't be a large literature 24 25 about and is not as standard.

1 0 Your colleagues at NERA have written about how to 2 adjust an event study model to account for periods of 3 increased market volatility; right? Yeah, and they have in the way that --4 5 It was like the credit crisis, for example, which was a much longer period, I think is what they were 6 7 referring to, and one of the approaches is to shorten your 8 control period to around the period of volatility. But none of them have written anything about what 9 to do during this particular period, which was very short 10 11 and extremely high volatility. 12 In connection with your work on this matter, did 0 13 you ever attempt to alter the control period in order to 14 account for this increased volatility? T didn't --15 Α 16 I didn't. No, I did not here. 17 In this case there's really no need to. 18 absolutely nobody who mentions the Seeking Alpha article, 19 and there's no new information in the Seeking Alpha article, and the very information that Plaintiffs claim has been not 20 told to the market, this article actually, as we say, 21 22 instead of saying now we found out that this is dry gas and much more dry gas, is actually still calling it a wet gas 23 24 rich, so it's --25

Not only is there no new negative information

1 that's related to the misrepresentations in this article, 2 it's actually saying the opposite, which is that the prices 3 have driven down the value of the company and that this is a wet gas rich -- Alpine High is wet gas rich. 4 5 Moreover, nobody is paying any attention to this article at all. Literally we can't find anyone who mentions 6 7 it. And there is nothing new and corrective about Alpine 8 High in here. So that's why you didn't need to adjust your 9 Q 10 event study to account for market volatility even though 11 there are ways to do so? MS. HEFLEY: Object, mischaracterizes testimony. 12 13 Α Well, it's one reason they're --14 So I think how you adjust on the craziest 15 volatility day of the whole time period. 16 So the COVID period is crazy in terms of 17 volatility. And if you look at the VIX index, I think that 18 huge spike in the VIX index, if you look at chart 44, is the 19 exact date of this it announcement. 20 So what is the appropriate way to make an 21 adjustment I don't think is well-established academic 22 literature, and this is a particularly crazy day, so rather than getting into an unnecessary analysis when there's 23 24 absolutely no evidence at all that this Seeking Alpha 25

article had any new negative information about Alpine High

1 and that anyone paid any attention to this article and that 2 this article had any impact on the market. So there's just 3 absolutely nothing. 4 It looks like all that's happened is Plaintiffs, 5 in writing their Complaint, saw a price drop and just tried to find something that anyone said that had anything to do 6 with anything, and found an article that nobody else has 7 8 mentioned at all. And because you formed those views about the 9 0 merits of Plaintiffs' claims, you felt it was unnecessary to 10 11 make this adjustment; is that correct? 12 No, that's a mischaracterization of what I just Α 13 said. 14 You said you didn't need to make --Q 15 Α There's no price impact from the Seeking Alpha 16 story because, one, it did not impact. Nobody paid any attention to this article at all. It's not written by a 17 18 professional analyst. There is no information in this 19 article that's corrective of any of the alleged 20 misrepresentations. There's no new information about Alpine 21 High, period, in this article. There's no new information 22 about the company, period, in this article. 23 So there's absolutely no way that this --24 There's nothing about this that --25 All of that is very conclusive evidence that this

1 is not impacting stock price because it is correcting 2 alleged misrepresentations. 3 All I'm asking is, everything you just said, that's why you felt the adjustment -- making this adjustment 4 5 was unnecessary; right? Because there is absolutely nothing to suggest 6 7 that this article had any impact on the stock price or that 8 this article was in any way corrective of any of the alleged misrepresentations, it was unnecessary to --9 And there's no evidence that anyone saying that 10 11 Apache stock price, actually, particularly underperformed on this date. 12 13 There's nothing about this date that anyone is 14 mentioning as being important or news relative to Apache. So for all of those reasons, which are very 15 16 strong and a lot of reasons, there isn't -- it seemed 17 unnecessary to try to create an additional model and 18 something that's, you know, not necessarily --19 There might be different approaches and may not 20 be as straightforward to determine what is the most 21 appropriate way to adjust for increased volatility. 22 So it's inarquable that this is a period of 23 extreme volatility. 24 What is the most appropriate way to do that? 25 I have not come to a conclusion regarding that.

Τ.	Q were there any other information about Apache	
2	disclosed on March 16, 2020?	
3	A Not that Plaintiffs allege is a corrective	
4	disclosure and nothing that I can find that is at all	
5	potentially corrective of the alleged misrepresentations.	
6	Q I'm not asking you about information that was	
7	corrective.	
8	I'm asking, was there anything at all.	
9	A I don't recall, but I looked carefully for	
LO	whether there was anything that is potentially allegedly	
L1	corrective of the misrepresentations.	
L2	I don't, as I sit here, recall if there may have	
L3	been something else. I don't recall anything.	
L4	Q Are you offering an opinion in this case that a	
L5	Seeking Alpha article can never constitute a corrective	
L6	disclosure?	
L7	A No, I'm not.	
L8	Q Are you offering an opinion in this case that a	
L9	Seeking Alpha article can never provide evidence of price	
20	impact?	
21	A No.	
22	Q Are you offering an opinion in this case that a	
23	Seeking Alpha article can never contain new or relevant	
24	information about a company?	
25	A No.	

1	Q You've mentioned the fact that you're saying no
2	one reported on the Seeking Alpha article.
3	Can you tell me how you've reached that
4	conclusion?
5	Did you read every news article and analyst
6	report that was published following these dates?
7	A I read every analyst report on Apache and
8	searched through all the news articles searched through
9	everything we could find, Bloomberg, Factiva.
10	Factiva aggregates 300,000, I want to say,
11	different
12	No.
13	Let's see. I used to know the numbers. Now I'm
14	late in the day.
15	Factiva aggregates a lot of news sources.
16	Apache is a well-covered company, and through
17	nothing that we could find, could we find anyone that cared
18	about this article.
19	Q How did you search for whether there was anyone
20	caring about the article?
21	Did you search for Seeking Alpha?
22	A We searched for Seeking Alpha. We searched for
23	Apache. We searched in Factiva. We searched in Bloomberg.
24	We searched through the analyst reports.
25	Q I asked you, did you apply search terms is what

Complaint focused on, and that is just not new information.

25

1 That is not corrective of the alleged misrepresentations. 2 Were there any analyst reports issued on or Q 3 around March 16th that addressed Apache's financial health 4 or its leverage ratios? 5 All the analyst reports will address their Α financial health and their leverage ratios. All analyst 6 7 reports will discuss financial health, and all analyst 8 reports will issue numbers about their debt unless they're 9 just very short, you know, mini updates. That will be something that will be in every analyst report. 10 11 You can look at my list of analyst reports to see 12 what are the dates of analyst reports. 13 Typically every single analyst report is going to 14 mention the debt levels --15 Any analyst reports --Q 16 -- financial health. Α 17 Were there analyst reports issued on March 16th 0 18 that downgraded the company due to concerns about its 19 financial health? There may be, but they didn't get new information 20 21 about the financial health. They came to conclusions about 22 They didn't learn anything new about Alpine High. 23 They're not disclosing any new information about Alpine 24 High. 25 They're just --

1 0 Are you finished with your answer? 2 Α Yeah. 3 0 You are aware, right, that a Susquehanna analyst downgraded the company on March 16th, right, because of 4 5 concerns about its financial health? That's very possible, but that doesn't surprise 6 7 I don't have that in my head, but that's not corrective information. 8 They're not saying they've learned something new 9 10 about Alpine High and about what Plaintiffs are alleging. 11 They are incorporating new and lower prices. Where in your report --12 0 13 Let me ask you this: If you look at Tab 2, the 14 Complaint, paragraph 315, Plaintiffs allege that a 15 Susquehanna analyst downgraded the company on March 16; 16 correct? 17 315? Α 18 315. 0 19 Α This is not alleged as a corrective disclosure. 20 0 Do you see in the same paragraph discussing the 21 Seeking Alpha article, it says that same day Susquehanna 22 Financial Group downgraded Apache's shares? 23 Do you see that it's there? 24 Α Yes, I do. 25 They're not downgrading it because they've

corrective disclosures besides the ones -- corrective disclosures in the Complaint and in the expert's report and in the Motion for Class Certification.

> I'm not insinuating anything. MR. RUSSO:

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1 just asking where this analysis of the Susquehanna 2 report appears in the report. 3 MS. HEFLEY: Objection, asked and answered. 4 MR. RUSSO: Why don't we take five minutes. 5 is probably a good time. VIDEOGRAPHER: Off the record 3:54 p.m. 6 7 (Recess was taken.) 8 VIDEOGRAPHER: Back on the record 4:11 p.m. 9 BY MR. RUSSO: 10 Ms. Allen, can you turn to paragraph 104 of your 11 complaint -- of your report? 12 The chart that you've included here compares 13 Apache's stock price to -- stock price movements to 14 movements in the S&P of Oil and Gas Exploration and 15 Production Select Industry Index; right? 16 Α Right. 17 And the point you're discussing in paragraph 104 0 18 is the fact that Apache's stock moved in line with this index; right? 19 2.0 Α That's one of the points, yes. 21 This is the index that you controlled for 0 Okav. 22 in your alternative event study; right? 23 That's right. Α 24 0 So the residual returns that you calculate under 25 your event study have controlled for the correlation that

1 exists between Apache and the other constituents of this 2 index; right? 3 Yeah, so it uses a control period that's, you 4 know, a year before each of the dates. 5 That's right. And the residual returns that you've 6 0 7 calculated for Apache are returns that would exist above and 8 beyond what you would expect based on this correlation with the index; right? 9 10 Α They're controlling for that. That's right. 11 Q This chart that you've included in paragraph 104 12 is limited to -- roughly limited to the focus period; right? 13 Α That's right. 14 Have you studied whether or not a similar Q 15 correlation exists during the pre-focus period? 16 I've not looked at what happens before the focus Α 17 period. 18 Apart from preparing for your deposition, have 0 19 you done any work related to price impact on this matter 20 since submitting your report on June 16th? 21 Α I mean, after submitting the report, some sort of 22 backup and things like that, but only --23 No, really, I mean, other than sort of backing up 24 I don't remember if we did turnover of the report. 25 materials or something along those lines, but that's it.

1	MR. RUSSO: Ms. Allen, I have no further
2	questions. Thank you very much for your time today.
3	MS. HEFLEY: I'll reserve my questions.
4	VIDEOGRAPHER: Anything else for the record,
5	Counsel?
6	This now concludes the deposition of Lucy Allen.
7	We're going off the record at 4:15 p.m.
8	MS. HEFLEY: I don't think we need a rough draft,
9	but definitely need a copy of the transcript
10	electronically.
11	MR. RUSSO: We'd want a rough, and then I'm not
12	sure what the turnaround was last time on the finals.
13	(Whereupon, the deposition was concluded at
14	4:15 p.m.)
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1	CERTIFICATE
2	I, Gina Williams, Registered Professional Court
3	Reporter, do certify that the above deposition was reported
4	by me and that the foregoing transcript is a true and
5	accurate record to the best of my knowledge, skills, and
6	ability.
7	I further certify that I am not an employee of
8	counsel or any of the parties, nor a relative or employee of
9	any attorney or counsel connected with the action, nor
10	financially interested in the action.
11	Subscribed and sworn to before me when taken this
12	27th day of July, 2023.
13	Q. 911.00.
14	<u>Gina Williams</u>
15	GINA WILLIAMS, RPR, CRR
16	
17	
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21	
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rrusso@ktmc.com (1)
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sdileo@saxenawhite.co
\mathbf{m} (1)
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setting (1)seven (1) sever (1)severing (2) Share (3)shares (3)short (3)shortcut (1) shorten (2) **show** (17) showing (4)shown (1)shows (8)Shroti (1) side (1)sidebar (1) signature (2) signed (1)significance (26) significant (53) significantly (3) signing (1)similar (7)Similarly (1) simpler (2) simply (1)single (3)**sit** (8) situation (4) situations (2) skills (1) slight (1) small (3)software (2) sold (1)solely (1)somewhat (2) **sorry** (19) **sort** (16) sound (2)sounds (2) source (1) sources (1) SOUTHERN (2) speak (3)specialist (1) specific (21) specifically (9) specifics (1)

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